

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW MEXICO**

WILDEARTH GUARDIANS,)	
)	
Plaintiff,)	Case No. 1:19-CV-00505
)	
v.)	
)	
DAVID BERNHARDT, in his official)	
capacity as U.S. Secretary of the Interior,)	
and UNITED STATES BUREAU OF)	
LAND MANAGEMENT;)	
)	
Defendants.)	
)	

AMENDED PETITION FOR REVIEW OF AGENCY ACTION

INTRODUCTION

1. Plaintiff WildEarth Guardians (“Guardians”) hereby brings this civil action for declaratory and injunctive relief against David Bernhardt and the United States Bureau of Land Management (“BLM”), (collectively “Defendants”), for their authorization and issuance of 192 oil and gas leases covering approximately 62,000 acres of land in New Mexico administered by the BLM in the agency’s Pecos District, in violation of the National Environmental Policy Act (“NEPA”), 42 U.S. C. §§ 4321–4370h, the Federal Land Policy and Management Act, 43 U.S.C. §§ 1701–1787 and their implementing regulations.

2. BLM’s issuance of the challenged leases confers the right to expand oil and gas development in the Greater Carlsbad region, threatening Carlsbad Caverns National Park and the surrounding area’s fragile karst terrain and cave systems, steep slopes, vital wildlife habitat, and already-deteriorating air quality. In conferring rights that authorize the expansion of oil and gas

development, Defendants failed to acknowledge or analyze the serious environmental consequences of this decision, including potentially significant impacts to climate, air quality, and water resources. Defendants also failed to take into account the significant environmental harms caused by horizontal drilling and multi-stage fracturing, relatively new technologies currently being used to dramatically expand oil and gas development in the Greater Carlsbad region.

3. Horizontal drilling and multi-stage fracturing of the various shale formations of the Permian Basin have environmental impacts that are substantially different in both kind and intensity from drilling techniques previously employed in the Greater Carlsbad region. Moreover, horizontal drilling and multi-stage fracturing have altered the economics of drilling, allowing extraction of oil and gas from tight shale formations for the first time in some areas and intensifying the scale of reasonably foreseeable development in other areas. Fundamentally, these unconventional drilling techniques pose a heightened risk of significant environmental and public health impacts, including the emission of potent greenhouse gases and hazardous air pollutants, and contamination of surface and groundwater supplies.

4. This lawsuit challenges BLM's final agency actions, which give rise to Guardians' claims. First, Guardians challenges the following final agency actions (collectively, "Leasing Authorizations"):

- A. BLM's leasing decisions related to its September 7, 2017 lease sale for the Pecos District Office, which consisted of: (a) BLM's decision to proceed with the September 7, 2017 lease sale on the basis of an inadequate Environmental Assessment ("EA") and Finding of No Significant Impact ("FONSI"); (b) BLM's denial of Guardians' July 6, 2017 Protest; and (c) BLM's issuance of

43¹ lease parcels to Lessees on March 30, 2018.

- B. BLM's leasing decisions related to its December 7, 2017 lease sale for the Pecos District Office, which consisted of: (a) BLM's decision to proceed with the December 7, 2017 lease sale on the basis of an inadequate EA and FONSI; (b) BLM's denial of Guardians' October 6, 2017 Protest; and (c) BLM's issuance of all 7 lease parcels to Lessees on March 30, 2018.
- C. BLM's leasing decisions related to its September 5–6, 2018 lease sale for the Pecos District Office, which consisted of: (a) BLM's decision to proceed with the September 5–6, 2018 lease sale on the basis of an inadequate EA and FONSI; (b) BLM's denial of Guardians' July 30, 2018 Protest; and (c) BLM's issuance of all 142 lease parcels to Lessees on October 22, 2018.

5. The specific lease parcels challenged in this action are identified in Table A at the end of this complaint.

6. In authorizing and issuing the 192 lease parcels, Defendants failed to take a hard look at the direct, indirect, and cumulative impacts of oil and gas leasing and development on the lease parcels, failed to provide a convincing statement of reasons to justify their decisions to forego an environmental impact statement ("EIS"), unlawfully proceeded with an action that will prejudice BLM's pending development of a new Carlsbad Resource Management Plan ("RMP") and accompanying EIS, and failed to provide sufficient public participation opportunities in

¹ As detailed in paragraph 156 below, BLM originally issued 61 leases resulting from the September 2017 lease sale; however, 18 of these leases issued were subsequently cancelled. By stipulation, Guardians agreed to dismiss these cancelled leases from this litigation with BLM's assurance that a new Environmental Assessment will be prepared before any of these cancelled leases are reinstated. ECF No. 29. This Amended Petition for Review is filed to formally remove these 18 cancelled leases from this litigation.

violation of FLPMA and NEPA.

7. Second, Guardians challenges BLM's January 31, 2018 issuance of Instruction Memorandum 2018-034 ("IM 2018-034"), as an improperly issued legislative rule that failed to go through required notice-and-comment procedures under the APA. 5 U.S.C. § 553. In slashing public participation opportunities in BLM's oil and gas leasing process, BLM's issuance of IM 2018-034 also violates the substantive public participation requirements of FLPMA and NEPA.

JURISDICTION & VENUE

8. This action arises under NEPA, 42 U.S.C. §§ 4321-4370h, FLPMA, 43 U.S.C. § 1701-1787, and the Administrative Procedure Act ("APA"), 5 U.S.C. §§ 701-706.

9. Jurisdiction is proper in this Court pursuant to 28 U.S.C. § 1331, because the action raises a federal question. The Court has authority to issue the requested declaratory and injunctive relief pursuant to 28 U.S.C. §§ 2201, 2202, and 5 U.S.C. §§ 705, 706.

10. This action reflects an actual, present, and justiciable controversy between Guardians and the Defendants within the meaning of the Declaratory Judgment Act, 28 U.S.C. § 2201.

11. The challenged agency actions are final and subject to judicial review pursuant to 5 U.S.C. §§ 702, 704, & 706.

12. Guardians has exhausted any and all available and required administrative remedies.

13. Venue in this Court is proper pursuant to 28 U.S.C. § 1391(e). A substantial part of the events and omissions giving rise to this case occurred in BLM offices located in New Mexico, and this case involves public lands and environmental resources located in New Mexico.

PARTIES

14. Plaintiff WILDEARTH GUARDIANS is a non-profit membership organization based in Santa Fe, New Mexico, with offices throughout the West. Guardians has more than 231,000 members and activists, some of whom live, work, or recreate on public lands in the Greater Carlsbad region, including on and near the lease parcels challenged herein. Guardians and its members are dedicated to protecting and restoring the wildlife, wild places, wild rivers and health of the American West. Towards this end, Guardians and its members work to replace fossil fuels with clean, renewable energy in order to safeguard public health, the environment, and the Earth's climate.

15. Guardians' members regularly use and enjoy the wildlands, wildlife habitat, rivers, streams, and healthy environment on BLM and other public lands in New Mexico, including lands in and adjacent to the lease sale parcels that are the subject of this Complaint, as well as areas outside the lease parcels that are affected by development of the leases challenged herein. Guardians' members regularly use public lands in the Greater Carlsbad region that are on, around, and within view of lands affected by the Leasing Authorizations challenged herein for hiking, fishing, hunting, camping, spelunking, photographing scenery and wildlife, wildlife viewing, stargazing, aesthetic enjoyment, spiritual contemplation, and engaging in other vocational, scientific, and recreational activities. Guardians' members derive recreational, inspirational, scientific, educational, and aesthetic benefit from their activities on lands covered by the leases that are the subject of the Leasing Authorizations challenged herein, and on lands that are around or within view of lands affected by the Leasing Authorizations challenged herein. The affected lands within or near the lease sale parcels include very popular and iconic

landscapes, including, but certainly not limited to, Carlsbad Caverns National Park, the Guadalupe Mountains, the Pecos River, the Rio Penasco, and the Black River.

16. Guardians' members intend to continue to use and enjoy BLM and other New Mexico public lands, wildlands, wildlife habitat, rivers, streams, and healthy environments, including lands affected by the Leasing Authorizations challenged herein, frequently and on an ongoing basis in the future, including this summer, fall, and winter.

17. Guardians and its members also have a procedural interest in Defendants' full compliance with NEPA's and FLPMA's planning and decisionmaking processes for the challenged Leasing Authorizations, and Defendants' attendant duty to substantiate their decisions in the record for the challenged lease sales.

18. Guardians and its members have participated in BLM's oil and gas leasing decisions challenged in this action, including by submitting scoping comments, comments on draft NEPA documents, and administrative protests of the BLM's challenged decisions. However, BLM's unlawful promulgation and implementation of new, more restrictive public participation provisions in IM 2018-034 has negatively impacted Guardians' and its members' ability to fully review and meaningfully participate in agency decisions due to the minimal public notice and tightened comment and protest deadlines now provided. Guardians and its members continue to participate in BLM leasing decisions in the Pecos District, but the restrictive public participation opportunities now provided by BLM in accordance with IM 2018-034 have made this participation substantially more difficult. Guardians has exhausted all legally required administrative remedies before bringing this action.

19. Guardians' members' enjoyment of public lands in and adjacent to the leases challenged herein will be adversely affected and diminished as a result of Defendants' leasing

actions. Guardians members have not only recreated on public lands that include various of the lease sale parcels that are the subject of this lawsuit, but they enjoy public lands adjacent to these parcels from which development would be visible. The reasonably foreseeable development of these lease parcels stands to directly alter the natural state of public lands within the lease areas and throughout the surrounding region, produce air pollution that is offensive, create noise that disrupts wildlife and recreational enjoyment and light pollution that disrupts aesthetic enjoyment of stargazing under New Mexico's dark skies, and lead to connected development that will further adversely impact nearby public and private lands, including road construction, truck traffic, and the construction of oil and gas pipelines and processing facilities needed to sustain the production of oil and gas on the lease parcels that are the subject of this lawsuit.

20. The aesthetic, recreational, scientific, educational, religious, and procedural interests of Guardians and its members have been adversely affected and irreparably injured by the process that led to Defendants' decisions to authorize the sale of the 192 lease parcels, and by the Leasing Authorizations which now restrict BLM's ability to prevent oil and gas development on the leased parcels. These are actual, concrete injuries caused by Defendants' failure to comply with mandatory duties under NEPA and FLPMA.

21. A favorable ruling in this case would redress the harms that Guardians and their members stand to suffer as a result of Defendants' actions. Had Defendants provided the public participation opportunities required by NEPA and FLPMA, Guardians and its members would have been able to more fully review the potential impacts of the proposed lease sales and participate in BLM's decision-making process before the leases were sold. If Defendants had properly considered the negative impacts of their actions on climate, air quality, and water resources, they likely would have rejected offering leases for sale and issuance. This would have

eliminated the threat of reasonably foreseeable oil and gas development, preventing the diminishment of the enjoyment of public lands used by Guardians members. A favorable ruling would ensure that as Guardians' members continue to use and enjoy public lands affected by Defendants' actions, their harms would be reduced, if not eliminated.

22. Defendant DAVID BERNHARDT, sued in his official capacity as the Secretary of the United States Department of the Interior, is responsible for managing the public lands and resources in New Mexico and, in that official capacity, is responsible for implementing and complying with federal law, including the federal laws implicated by this action.

23. Defendant UNITED STATES BUREAU OF LAND MANAGEMENT, an agency within the United States Department of the Interior, is responsible for managing public lands and resources in New Mexico, including federal onshore oil and gas resources and the leasing program for those resources. In this managerial capacity, BLM is responsible for implementing and complying with federal law, including the federal laws implicated by this action.

LEGAL BACKGROUND

I. National Environmental Policy Act

24. NEPA is our “basic national charter for the protection of the environment.” 40 C.F.R. § 1500.1. It was enacted—recognizing that “each person should enjoy a healthful environment”—to ensure that the federal government uses all practicable means to “assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings,” and to “attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences,” among other policies. 42 U.S.C. § 4331(b).

25. NEPA regulations explain, in 40 C.F.R. §1500.1(c), that:

Ultimately, of course, it is not better documents but better decisions that count. NEPA's purpose is not to generate paperwork – even excellent paperwork – but to foster excellent action. The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment.

26. NEPA achieves its purpose through “action forcing procedures. . . requir[ing] that agencies take a *hard look* at environmental consequences.” *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989) (citations omitted) (emphasis added).

27. “Agencies shall integrate the NEPA process with other planning at the earliest possible time to insure that planning and decisions reflect environmental values, to avoid delays later in the process, and to head off potential conflicts.” 40 C.F.R. § 1501.2.

28. Federal agencies must comply with NEPA before there are “any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.” 42 U.S.C. § 4332(2)(C)(v); *accord* 40 C.F.R. §§ 1501.2, 1502.5(a).

29. NEPA requires Defendants to consider “any adverse environmental effects which cannot be avoided.” 42 U.S.C. § 4332(C)(ii). In so doing, Defendants must “identify and develop methods and procedures . . . which will insure that presently unquantified environmental amenities and values may be given appropriate consideration in decisionmaking along with economic and technical considerations.” *Id.* § 4332(B).

30. To accomplish these purposes, NEPA requires that all federal agencies prepare a “detailed statement” regarding all “major federal actions significantly affecting the quality of the human environment.” *Id.* § 4332(C). This statement, known as an Environmental Impact Statement (“EIS”), must, among other things, rigorously explore and objectively evaluate all reasonable alternatives, analyze all direct, indirect, and cumulative environmental effects, and

include a discussion of the means to mitigate adverse environmental impacts. *Id.* §§ 1502.14 and 1502.16.

31. Direct effects include those that “are caused by the action and occur at the same time and place.” *Id.* § 1508.8(a). Indirect effects include effects that “are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.” *Id.* § 1508.8(b). Cumulative effects are “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.” *Id.* § 1508.7. “Effects” are synonymous with “impacts.” *Id.* § 1508.8.

32. These effects include “ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative” effects. *Id.* § 1508.8.

33. BLM’s analysis must do more than merely identify impacts; it must also “evaluate the severity” of effects. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 352 (1989); 40 C.F.R. § 1502.16(a)-(b) (recognizing that agency must explain the “significance” of effects).

34. An agency may also prepare an Environmental Assessment (“EA”) to determine whether an EIS is necessary. 40 C.F.R. §§ 1501.3, 1508.9. An EA must include a discussion of alternatives and take a hard look at the environmental impacts of the action. *Id.* § 1508.9.

35. If an agency decides not to prepare an EIS, an EA must “provide sufficient evidence” to support a Finding of No Significant Impact (“FONSI”). *Id.* § 1508.9(a)(1). Such evidence must demonstrate that the action “will not have a significant effect on the human environment[.]” *Id.* § 1508.13. An assessment of whether or not an impact is “significant” is based on a consideration of the “context and intensity” of the impact. *Id.* § 1508.27. “Context”

refers to the scope of the proposed action, including the interests affected. *Id.* § 1508.27(a). “Intensity” refers to the severity of the impact and must be evaluated with a host of factors in mind, including but not limited to “[u]nique characteristics of the geographic area[,]” “[t]he degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks[,]” “[w]hether the action is related to other actions with individually insignificant but cumulatively significant impacts[,]” and “[w]hether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.” *Id.* § 1508.27(b). “Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment.” *Id.*

36. In certain circumstances, NEPA allows an agency to “tier” a site-specific environmental analysis for a project to a broader EIS for a program or plan under which the subsequent project is carried out. *Id.* § 1508.28. When an agency tiers a site-specific analysis to a broader EIS, “the subsequent statement or environmental assessment need only summarize the issues discussed in the broader statement and incorporate discussions from the broader statement by reference and shall concentrate on the issues specific to the subsequent action.” *Id.* § 1502.20.

37. The Department of Interior’s NEPA regulations for using tiered documents specify that site-specific EAs “can be tiered to a programmatic or other broader-scope [EIS].” 43 C.F.R. § 46.140(c). As a general rule, however, tiering a site-specific EA to another NEPA document is only appropriate where “the conditions and environmental effects described in the broader NEPA document are still valid” or the site-specific EA addresses any exceptions. *Id.* § 46.140. If the programmatic EIS sufficiently analyzes the impacts of the site-specific action, the agency is not required to perform additional analysis of impacts. *Id.* § 46.140(a). However, if the

impacts analysis in the programmatic EIS “is not sufficiently comprehensive or adequate to support further decisions,” the agency’s EA must explain this and provide additional analysis. *Id.* § 46.140(b).

38. NEPA requires that, until an agency issues a Record of Decision for a pending NEPA document, “no action concerning the proposal shall be taken which would: (1) have an adverse environmental impact; or (2) limit the choice of reasonable alternatives.” 40 C.F.R. § 1506.1(a)(1), (2). NEPA also prohibits agencies from making an “irreversible and irretrievable commitment of resources,” without a full analysis. *Id.* § 1502.2(f).

39. According to these same regulations:

While work on a required program environmental impact statement is in progress and the action is not covered by an existing program statement, agencies *shall not* undertake in the interim any major Federal action covered by the program which may significantly affect the quality of the human environment unless such action:

- (1) Is justified independently of the program;
- (2) Is itself accompanied by an adequate environmental impact statement;
- and*
- (3) Will not prejudice the ultimate decision on the program. Interim action prejudices the ultimate decision on the program when it tends to determine subsequent development or limit alternatives.

Id. § 1506.1(c) (emphases added).

40. NEPA regulations mandate that agencies “shall to the fullest extent possible . . . [e]ncourage and facilitate public involvement in the decisions which affect the quality of the human environment.” 40 C.F.R. § 1500.2(d). Indeed, “NEPA procedures must insure that environmental information is available to public officials and citizens *before decisions are made and before actions are taken* Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA.” *Id.* § 1500.1(b) (emphasis added).

41. NEPA and implementing CEQ regulations specifically require federal agencies to involve the public in preparing and considering environmental documents that implement the Act. *Id.* § 1506.6; *id.* § 1506.6(b)(1) (requiring federal agencies to “[p]rovide public notice of NEPA-related hearings, public meetings, and the availability of environmental documents so as to inform those persons and agencies who may be interested or affected”); *id.* § 1506.6(a) (requiring agencies to “make diligent efforts to involve the public in preparing and implementing their NEPA procedures”); *id.* § 1501.4(b) (requiring agencies to “involve . . . the public, to the extent practicable, in preparing [EAs]”); *id.* § 1502.19(a) (requiring public circulation of draft and final EISs).

II. The Federal Land Policy and Management Act (FLPMA)

42. Enacted in 1976, FLPMA governs BLM’s management of the public lands. *See* 43 U.S.C. §§ 1701–1787. In FLPMA, Congress directed that public lands:

be managed in a manner that will protect the quality of the scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use.

43 U.S.C. § 1701(a)(8).

43. To help achieve these purposes, FLPMA requires that land use plans—called Resource Management Plans (“RMPs”) for BLM lands—be developed with public input, and followed in managing the public lands. *See* 43 U.S.C. § 1712(a) (Secretary “shall, with public involvement and consistent with the terms and conditions of this Act, develop, maintain, and, when appropriate, revise land use plans which provide by tracts or areas for the use of the public

lands”); *id.* § 1732(a) (Secretary “shall manage the public lands . . . in accordance with the land use plans”).

44. In addition, FLPMA Section 309(e) requires that the public be allowed meaningful participation in public lands management decisions. *See* 43 U.S.C. § 1739(e). It provides:

In exercising his authorities under this Act, the Secretary, by regulation, shall establish procedures . . . to give the Federal, State, and local governments and the public adequate notice and an opportunity to comment upon the formulation of standards and criteria for, and to participate in, the preparation and execution of plans and programs for, and the management of, the public lands.

43 U.S.C. § 1739(e).

45. FLPMA Section 103 further defines “public involvement” as “the opportunity for participation by affected citizens in rule making, decision making, and planning with respect to the public lands, including public meetings or hearings held at locations near the affected lands, or advisory mechanisms, or such other procedures as may be necessary to provide public comment in a particular instance.” 43 U.S.C. § 1702(d).

46. The Department of the Interior’s regulations implementing FLPMA further require that “[t]he public shall be provided opportunities to meaningfully participate in and comment on the preparation of plans, amendments and related guidance and be given early notice of planning activities.” 43 C.F.R. § 1610.2(a).

47. FLPMA thus mandates that Interior and BLM involve the public in the “actual management of public lands.” *Donald K. Majors*, 123 IBLA 142, 147 (1992). “There are strong indications that Congress intended some form of public input for all decisions that may have significant impact on federal lands.” *Nat’l Wildlife Fed’n v. Burford*, 835 F.2d 305, 322 (D.C.

Cir. 1987) (citing H.R. Rep. No. 1163, 94th Cong., 2d Sess. 7 (1976), U.S. Code Cong. & Ad. News 1976, p. 6181), *rev'd on other grounds*, 497 U.S. 871 (1990).

III. Administrative Procedure Act

48. The APA provides a right to judicial review for any “person suffering legal wrong because of agency action.” 5 U.S.C. § 702. Actions that are reviewable under the APA include final agency actions “for which there is no other adequate remedy in a court.” 5 U.S.C. § 704.

49. Under the APA, a reviewing court shall “hold unlawful and set aside agency action . . . found to be arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.” *Id.* § 706(2)(A). A court must also compel agency action unlawfully withheld or unreasonably delayed. *Id.* § 706(1).

50. Under the APA, an agency must generally publish public notice of proposed rulemakings, including BLM land use plan revisions. *Id.* § 553. The APA carves out a “narrow” exception to this requirement for interpretative rules, general statements of policy, or rules of agency organization, procedure, or practice. *Id.* § 553(b)(A). This exception does not apply when notice or hearing is required by statute. *Id.* § 553. The Supreme Court has described a substantive or legislative-type rule as one “affecting individual rights and obligations.” *Chrysler Corp. v. Brown*, 441 U.S. 281, 302 (1979). In contrast, an interpretative rule is “merely a clarification or explanation of an existing statute or rule.” *First Bancorporation v. Bd. of Governors of Fed. Reserve Sys.*, 728 F.2d 434, 438 (10th Cir. 1984) (quoting *Guardian Federal Savings and Loan v. Federal Savings and Loan Ins. Corp.*, 589 F.2d 658, 664 (D.C. Cir.)). But where a “significant policy change [is] announced,” this constitutes the proposal of a substantive rule subject to the rulemaking provisions of § 553. *Id.*

IV. Legal Framework for Federal Oil and Gas Lease Authorizations

A. Mineral Leasing Act

51. Under the Mineral Leasing Act (“MLA”), as amended, the Secretary of the Interior is responsible for managing and overseeing mineral development on public lands, not only to ensure safe and fair development of the mineral resource, but also to “safeguard[]...the public welfare.” 30 U.S.C. § 187.

52. The Secretary has certain discretion, constrained by the laws at issue in this case, to determine where, when, and under what terms and conditions mineral development should occur. 43 C.F.R. § 3101.1-2.

53. BLM regulations implementing the MLA provide that oil and gas “[l]ease sales shall be conducted by a competitive oral or internet-based bidding process.” *Id.* § 3120.1-2.

54. BLM regulations also state that “[t]he authorized officer may suspend the offering of a specific parcel while considering a protest or appeal against its inclusion in a Notice of Competitive Lease Sale.” *Id.* § 3120.1-3.

B. BLM’s Oil and Gas Planning and Management

55. BLM manages onshore oil and gas development through a three-phase process. Each phase is distinct, serves distinct purposes, and is subject to distinct rules, policies, and procedures.

56. In the first phase, BLM prepares an RMP in accordance with 43 C.F.R. §§ 1600 *et seq.*, along with additional guidance found in BLM’s Land Use Planning Handbook (H-1601-1). An RMP projects present and future use of public lands and their resources by establishing management priorities, as well as guiding and constraining BLM’s implementation-stage management. With respect to fluid minerals leasing decisions, the RMP determines which lands

containing federal minerals will be open to leasing and under what general conditions, and must analyze the landscape-level cumulative impacts from predicted implementation-stage development.

57. A Reasonably Foreseeable Development Scenario underlies BLM's assumptions regarding the pace and scope of fluid minerals development within the RMP planning area. A Reasonably Foreseeable Development Scenario does not include any analysis of environmental impacts and is not a NEPA document.

58. In the second phase, BLM identifies the boundaries for lands to be offered for sale and proceeds to sell and execute leases for those lands through a lease sale. Leases are sold in accordance with 43 C.F.R. §§ 3120 *et seq.* Prior to January 31, 2018, BLM Instruction Memorandum ("IM") No. 2010-117 provided additional guidance regarding agency leasing procedures. As discussed further below, BLM replaced IM 2010-117 with a new, improperly promulgated rule, IM 2018-034, which drastically reduced NEPA review and public participation requirements. BLM followed the inadequate procedural requirements of IM 2018-034 for the September 2018 lease sale within the Pecos District, and has continued to do so for subsequent sales.

59. Oil and gas companies typically nominate leaseholds for sale through the submission of an "Expression of Interest." *See* 43 C.F.R. § 3120.1-1.

60. While BLM state offices manage lease sales, the BLM field offices where specific lease parcels are located are responsible for conducting NEPA review, soliciting public comment, and applying appropriate site-specific leasing stipulations.

61. BLM regulations allow for the public to protest the sale of specific parcels. *Id.* § 3120.1-3. Under the provisions of IM 2010-117, BLM previously allowed for the authorized

officer to suspend the offering of specific parcels pending resolution of an applicable protest in accordance with BLM regulations, *id.* § 3120.1-3, but IM 2018-034 now mandates that the sale of parcels with pending protests proceed without delay. BLM must, however, resolve any and all protests received prior to issuing a lease parcel to a successful bidder.

62. Prior to the point BLM sells a lease, BLM may refuse to lease public lands, even if public lands were made available for leasing pursuant to the RMP. *Udall v. Tallman*, 380 U.S. 1, 4 (1965).

63. Prior to a BLM lease sale, BLM has the authority to subject leases to terms and conditions, which can serve as “stipulations” to protect the environment. 43 C.F.R. § 3101.1-3. Once BLM issues leases, however, it may not retroactively impose lease stipulations. Instead, BLM may impose conditions of approval that are delimited by the terms and conditions of the lease. *Id.* § 3101.1-2.

64. Once sold, the lease purchaser has the right to use as much of the leased land as is necessary to explore and drill oil and gas within the lease boundaries, subject to stipulations attached to the lease. *Id.*

65. The Secretary of the Interior has the authority to cancel leases that have been “improperly issued.” *Id.* § 3108.3(d). A lease may be canceled where BLM has not complied with NEPA prior to lease issuance. *Clayton W. Williams, Jr. Exxon Corp.*, 103 IBLA 192 (1988).

66. The third-phase occurs once BLM issues a lease, where the lessee is required to submit an application for permit to drill (“APD”) to BLM prior to drilling. 43 C.F.R. § 3162.3-1(c). At this stage, BLM may condition the approval of the APD on the lessees’ adoption of “reasonable measures” whose scope is delimited by the lease and the lessees’ surface use rights. *Id.* § 3101.1-2.

67. Oil and gas operations are required to be conducted in accordance with BLM regulations at 43 C.F.R. §§ 3160 *et seq.*

FACTUAL BACKGROUND

I. The Climate Crisis

A. The Science of Climate Change

68. The climate crisis has been intensively studied and acknowledged at the global, national, and regional scales. The scientific evidence is clear and compelling – climate change is being fueled by the human-caused release of greenhouse gas emissions, in particular carbon dioxide and methane.

69. Carbon dioxide is the leading cause of climate change and the most emitted greenhouse gas in the United States. According to a 2018 EPA report, *Inventory of U.S. Greenhouse Gas Emissions and Sinks, 1990-2016*, carbon dioxide comprised 82 percent of total U.S. greenhouse gas emissions, or 5.3 billion metric tons. EPA’s data indicates that fossil fuel combustion accounted for 93.5 percent of carbon dioxide emissions in 2016.

70. The Intergovernmental Panel on Climate Change (“IPCC”) is a Nobel Prize-winning scientific body within the United Nations that reviews and assesses the most recent scientific, technical, and socio-economic information relevant to our understanding of climate change. The IPCC has identified the heat-trapping effect of methane—or global warming potential—as 36 times more potent than carbon dioxide over a 100-year period and 87 times more potent over a 20-year period. Future oil and gas development on the challenged leases has the potential to significantly increase methane emissions in BLM’s Pecos District, and more generally in the Greater Carlsbad region’s Permian Basin.

71. In a 2014 summary to policymakers, the IPCC provided a summary of our understanding of human-caused climate change. Among other things, the IPCC stated:

- Human influence on the climate system is clear, and recent anthropogenic emissions of greenhouse gases are the highest in history. Recent climate changes have had widespread impacts on human and natural systems.
- Warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, and sea level has risen.
- Anthropogenic greenhouse gas emissions have increased since the pre-industrial era, driven largely by economic and population growth, and are now higher than ever. This has led to atmospheric concentrations of carbon dioxide, methane, and nitrous oxide that are unprecedented in at least the last 800,000 years. Their effects, together with those of other anthropogenic drivers, have been detected throughout the climate system and are extremely likely to have been the dominant cause of the observed warming since the mid-20th century.
- In recent decades, changes in climate have caused impacts on natural and human systems on all continents and across the oceans. Impacts are due to observed climate change, irrespective of its cause, indicating the sensitivity of natural and human systems to changing climate.
- Continued emission of greenhouse gases will cause further warming and long-lasting changes in all components of the climate system, increasing the likelihood of severe, pervasive, and irreversible impacts for people and ecosystems. Limiting climate change would require substantial and sustained reductions in greenhouse gas emissions which, together with adaptation, can limit climate change risks.
- Surface temperature is projected to rise over the 21st century under all assessed emission scenarios. It is very likely that heat waves will occur more often and last longer, and that extreme precipitation events will become more intense and frequent in many regions. The ocean will continue to warm and acidify, and global mean sea level will continue to rise.²

72. Just recently, the IPCC reaffirmed the severe impacts from climate change and that rapid action away from fossil fuels is needed if we are to limit the impacts of climate change:

² IPCC AR5, *Summary for Policymakers* (Mar. 2014).

- Human activities are estimated to have caused approximately 1.0°C of global warming above pre-industrial levels, with a likely range of 0.8°C to 1.2°C. Global warming is likely to reach 1.5°C between 2030 and 2052 if it continues to increase at the current rate.
- Warming from anthropogenic emissions from the pre-industrial period to the present will persist for centuries to millennia and will continue to cause further long-term changes in the climate system, such as sea level rise, with associated impacts but these emissions alone are unlikely to cause global warming of 1.5°C.
- Climate models project robust differences in regional climate characteristics between present-day and global warming of 1.5°C, and between 1.5°C and 2°C. These differences include increases in: mean temperature in most land and ocean regions, hot extremes in most inhabited regions, heavy precipitation in several regions, and the probability of drought and precipitation deficits in some regions.
- Climate-related risks to health, livelihoods, food security, water supply, human security, and economic growth are projected to increase with global warming of 1.5°C and increase further with 2°C.
- Pathways limiting global warming to 1.5°C with no or limited overshoot would require rapid and far-reaching transitions in energy, land, urban and infrastructure (including transport and buildings), and industrial systems (high confidence). These systems transitions are unprecedented in terms of scale, but not necessarily in terms of speed, and imply deep emissions reductions in all sectors, a wide portfolio of mitigation options and a significant upscaling of investments in those options (medium confidence).³

73. The western U.S. is particularly susceptible to the effects of climate change. The West is already experiencing increasing temperatures and prolonged droughts, with widespread impacts across our forests, wildlife, and human communities and threatening the West's resilience in the face of continued warming. Local economies, which are reliant on consistent precipitation and snowfall for surface and groundwater recharge, agriculture, recreation, and other uses, have also seen significant impacts.

³ IPCC SR 15, *Global Warming of 1.5°: Summary for Policy Makers* (Oct. 2018), http://report.ipcc.ch/sr15/pdf/sr15_spm_final.pdf.

74. With particular regard to the Southwest Region—which includes New Mexico—the Third National Climate Assessment included the following overview:

- Snowpack and streamflow amounts are projected to decline in parts of the Southwest, decreasing surface water supply reliability for cities, agriculture, and ecosystems.
- The Southwest produces more than half of the nation’s high-value specialty crops, which are irrigation-dependent and particularly vulnerable to extremes of moisture, cold, and heat. Reduced yields from increasing temperatures and increasing competition for scarce water supplies will displace jobs in some rural communities.
- Increased warming, drought, and insect outbreaks, all caused by or linked to climate change, have increased wildfires and impacts to people and ecosystems in the Southwest. Fire models project more wildfire and increased risks to communities across extensive areas.
- Projected regional temperature increases, combined with the way cities amplify heat, will pose increased threats and costs to public health in southwestern cities, which are home to more than 90% of the region’s population. Disruptions to urban electricity and water supplies will exacerbate these health problems.

75. The Fourth National Climate Assessment, released in 2018, notes that temperatures have already “increased across almost all of the Southwest region from 1901 to 2016,” magnifying the impacts of drought and wildfire. For example, hotter temperatures have already contributed to reductions in snowpack, amplifying drought conditions in the Colorado River Basin, the Rio Grande, and other critical watersheds. It is also estimated that the area burned by wildfire across the western United States between 1984 and 2015 was twice what would have burned had climate change not occurred.

76. Future projections for the region from the Fourth National Climate Assessment are even more alarming. Climate change threatens to lead to “to aridification (a potentially permanent change to a drier environment) in much of the Southwest, through

increased evapotranspiration, lower soil moisture, reduced snow cover, earlier and slower snowmelt, and changes in the timing and efficiency of snowmelt and runoff.” Climate change-related drought has already had massive impacts on food production and the agricultural economy of rural areas in the Southwest, and poses a long-term threat to regional food security.

B. Federal Climate Policy and Initiatives

77. In 2001, at the start of the George W. Bush Administration, the Secretary of the Interior established Interior policy that “[t]here is a consensus in the international community that global climate change is occurring and that it should be addressed in governmental decision making.” Secretarial Order 3226, *Evaluating Climate Change Impacts in Management Planning* (January 19, 2001) (amended January 16, 2009 by Secretarial Order No. 3226, Amendment No. 1) reinstated by Secretarial Order 3289 (Sept. 14, 2009)). Secretarial Order 3226 established the responsibility of Interior agencies, such as BLM, to “consider and analyze potential climate change impacts when undertaking long-range planning exercises, when setting priorities for scientific research and investigations, when developing multi-year management plans, and/or when making major decisions regarding potential utilization of resources under the Department’s purview.”

78. In a 2007 report entitled *Climate Change: Agencies Should Develop Guidance for Addressing the Effects on Federal Land and Water Resources*, the U.S. Governmental Accountability Office (“GAO”), concluded that the Department of the Interior had not provided specific guidance to implement Secretarial Order 3226, that officials were not even aware of Secretarial Order 3226, and that Secretarial Order 3226 had effectively been ignored.

79. Secretarial Order 3289, *Addressing the Impacts of Climate Change on America’s Water, Land, and Other Natural and Cultural Resources* (September 14, 2009), reinstated the

provisions of Order 3226, and recognized that “the realities of climate change require us to change how we manage the land, water, fish and wildlife, and cultural heritage and tribal lands and resources we oversee,” and acknowledged that Interior is “responsible for helping protect the nation from the impacts of climate change.”

80. In 2009, the Environmental Protection Agency (“EPA”) issued a formal finding under the Clean Air Act, 42 U.S.C. § 7521(a), that the changes in our climate caused by elevated concentrations of greenhouse gases in the atmosphere are reasonably anticipated to endanger the public health and welfare of current and future generations. 74 Fed. Reg. 66,496 (Dec. 15, 2009). EPA concluded that “the body of scientific evidence compellingly supports” the finding and recognized the potential human-induced climate change to have “far-reaching and multidimensional” impacts. *Id.* at 66,497. In 2015, EPA acknowledged more recent scientific assessments that “highlight the urgency of addressing the rising concentrations of CO₂ in the atmosphere.” 80 Fed. Reg. 64,661 (Oct. 23, 2015). The D.C. Circuit upheld this decision as supported by the vast body of scientific evidence on the subject. *See Coal. for Responsible Regulation, Inc. v. EPA*, 684 F.3d 102, 120-22 (D.C. Cir. 2012).

81. The Council on Environmental Quality (“CEQ”) has also recognized the unique nature of climate change and the challenges it imposes on NEPA compliance. On August 1, 2016, CEQ released *Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews* (hereafter, “2016 Climate Guidance”) (withdrawn on April 5, 2017, 82 Fed. Reg. 16576 (April 5, 2017)). Applicable to all proposed federal agency actions, “including land and resource management actions,” *id.* at 9, the 2016 Climate Guidance recognized that:

Climate change results from the incremental addition of GHG emissions from millions of individual sources, which collectively have a large impact on a global scale. CEQ recognizes that the totality of climate change impacts is not attributable to any single action, but are exacerbated by a series of actions including actions taken pursuant to decisions of the Federal Government. *Therefore, a statement that emissions from a proposed Federal action represent only a small fraction of global emissions is essentially a statement about the nature of the climate change challenge, and is not an appropriate basis for deciding whether or to what extent to consider climate change impacts under NEPA.* Moreover, these comparisons are also not an appropriate method for characterizing the potential impacts associated with a proposed action and its alternatives and mitigations because this approach does not reveal anything beyond the nature of the climate change challenge itself: the fact that diverse individual sources of emissions each make a relatively small addition to global atmospheric GHG concentrations that collectively have a large impact.

Id. at 10-11 (emphasis added).

82. The 2016 Guidance also stated that “[i]n the context of long-range energy, transportation, and resource management strategies...it would be useful and efficient to provide an aggregate analysis of GHG emissions or climate change effects in a programmatic analysis and then incorporate by reference that analysis into future NEPA reviews.” In particular, CEQ identifies “issuing leases for oil and gas drilling” as a “site-specific action[] that may benefit from being able to tier to a programmatic NEPA review.”

83. Just as the Trump Administration’s denial of the climate crisis does not alter scientific reality, its withdrawal of the 2016 Climate Guidance does not change BLM’s obligation under NEPA to take a hard look and fully assess the significance of the climate impacts of its oil and gas leasing decisions. *See San Juan Citizens All. v. United States Bureau of Land Mgmt.*, 326 F. Supp. 3d 1227, 1243 (D.N.M. 2018). In failing to make such an assessment, BLM has refused to avail itself to readily-available, scientifically-accepted tools for evaluating the significance of greenhouse gas emissions.

1. Social Cost of Carbon

84. In recognition of the consequences of human-caused climate change, federal agencies have developed a protocol for assessing the social cost of carbon dioxide emissions. The social cost of carbon is “a measure, in dollars, of the long-term damage done by a ton of carbon dioxide (CO₂) emissions in a given year.”⁴ Conversely, the social cost of carbon can represent “the value of damages avoided for a small emission reduction (i.e., the benefit of a CO₂ reductions).”⁵ The EPA has explained:

The [social cost of carbon protocol] is meant to be a comprehensive estimate of climate change damages and includes changes in net agricultural productivity, human health, property damages from increased flood risk, and changes in energy system costs, such as reduced costs for heating and increased costs for air conditioning. However, it does not currently include all important damages.⁶

85. A federal Interagency Working Group (“Working Group”)—consisting of the EPA, Center for Environmental Quality, Department of Energy, National Economic Council, Office of Management and Budget, Department of Agriculture, Department of Commerce, Department of Transportation, and other agencies—has prepared estimates of the cost that carbon pollution has on society. The Working Group prepared its first Social Cost of Carbon estimates in 2010, which was subsequently updated in 2013, 2015, and 2016.⁷

86. The Working Group’s Social Cost of Carbon estimates vary according to assumed discount rates and presumptions regarding the longevity and damages caused by carbon pollution

⁴ EPA, “Fact Sheet: The Social Cost of Carbon” (Dec. 2016), available at https://www.epa.gov/sites/production/files/2016-12/documents/social_cost_of_carbon_fact_sheet.pdf (last accessed May 30, 2019).

⁵ *Id.*

⁶ *Id.*

⁷ Interagency Working Group, “Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866” at 3 (revised August 2016).

in the atmosphere, which for 2015 produced a range of between \$11 and \$105 per metric ton of carbon dioxide. Accepted practice typically applies the median value to determine the social costs of a given project, although the range of values provided by the Working Group is also useful for comparing alternatives and evaluating the significance of climate impacts from a program or project. For 2020, the median Social Cost of Carbon value is \$42 per metric ton, which increases over time as additional carbon emissions become more costly to society.

2. Carbon Budgeting

87. Carbon budgeting is another well-established method for estimating the impacts from greenhouse gas emissions. BLM, however, did not use this useful tool to assess the significance of the impacts from greenhouse gas emissions resulting from the leasing authorizations.

88. The 2018 IPCC special report on *Global Warming of 1.5°C* provided a global carbon budget for a 66 percent probability of limiting warming to 1.5°C, estimated at 420 billion tons of CO₂ and 570 billion tons of CO₂ depending on the temperature dataset used, from January 2018 onwards. At the current emissions rate of 42 billion tons of CO₂ per year, this carbon budget would be expended in just 10 to 14 years, underscoring the urgent need for transformative national and global action to transition from fossil fuel use to clean energy. Importantly, a 2016 global analysis found that the carbon emissions that would be emitted from burning the oil, gas, and coal in the world's *currently operating* fields and mines would fully exhaust and exceed the carbon budgets consistent with staying below 1.5°C or 2°C.⁸ Further, the reserves in currently

⁸ Oil Change International, *The Sky's Limit: Why the Paris Climate Goals Require a Managed Decline of Fossil Fuel Production* (September 2016), available at: <http://priceofoil.org/2016/09/22/the-skys-limit-report/>.

operating oil and gas fields alone, even excluding coal mines, would lead to warming beyond 1.5°C. An important conclusion of the analysis is that *most* of the existing oil and gas fields and coal mines will need to be closed before their reserves are fully extracted in order to limit warming to 1.5 degrees.⁹ A significant portion of existing fields and mines will need to be closed to limit warming even to 2 degrees.¹⁰

89. The potential carbon emissions from *existing* fossil fuel reserves—the known belowground stock of extractable fossil fuels—considerably exceed both 2°C and 1.5°C of warming. “Estimated total fossil carbon reserves exceed this remaining [carbon budget] by a factor of 4 to 7.”¹¹ Studies estimate that global coal, oil and gas resources considered currently economically recoverable contain potential greenhouse gas emissions of 4,196 billion tons CO₂,¹² with other estimates as high as 7,120 billion tons CO₂.¹³ “For the 2°C or 1.5°C limits, respectively, 68% or 85% of reserves must remain in the ground.”¹⁴

90. Research on the United States’ carbon budget similarly establishes that the U.S. must halt new fossil fuel production and rapidly phase out existing production to avoid the worst

⁹ Oil Change International, *The Sky’s Limit California: Why the Paris Climate Goals Demand That California Lead in a Managed Decline of Oil Extraction*, 7, 13 (2018), available at: <http://priceofoil.org/ca-skys-limit>.

¹⁰ Oil Change International, *supra* note 7 at 5, 7.

¹¹ IPCC, *Climate Change 2014 Synthesis Report*, at 63 (2014), available at https://www.ipcc.ch/site/assets/uploads/2018/02/SYR_AR5_FINAL_full.pdf.

¹² Michael Raupach, *et al.*, *Sharing a quota on cumulative carbon emissions*, Nature Climate Change (Sept. 2014).

¹³ IPCC, *Climate Change 2014, Mitigation of Climate Change, Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, at 525 tbl. 7.2 (2014), available at: https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_full.pdf.

¹⁴ Oil Change International, *supra* note 7, at 6; *see also* Kevin Anderson and Alice Bows, *Reframing the climate change challenge in light of post-2000 emission trends*, Phil. Trans. R. Soc. (2008) (“to provide a 93% mid-value probability of not exceeding 2°C, the concentration (of atmospheric greenhouse gases) would need to be stabilized at or below 350 parts per million carbon dioxide equivalent (ppm CO_{2e})” compared to the current level of ~485 ppm CO_{2e}).

dangers of climate breakdown. Scientific studies have estimated the U.S. carbon budget consistent with a 1.5°C target at 25 billion tons CO₂-equivalent (CO₂e¹⁵) to 57 billion tons CO₂e on average,¹⁶ depending on the sharing principles used to apportion the global budget across countries. The estimated U.S. carbon budget consistent with limiting temperature rise to 2°C—a level of warming well above what the Paris Agreement requires and which would result in devastating harms to human society and the environment—ranges from 34 billion tons CO₂e to 123 billion tons CO₂e.¹⁷ Under any scenario, the remaining U.S. carbon budget compatible with the Paris climate targets is extremely small in comparison to fossil fuel reserves and in light of current emissions rates.

91. Federal fossil fuel resources on public lands, however, contain enough recoverable coal, oil and gas that, if extracted and burned, would result in as much as 492 billion tons CO₂e,¹⁸ far surpassing the entire *global* carbon budget for a 1.5°C target and nearly eclipsing the 2°C target, even without taking into consideration any consumption of fossil fuels produced on non-federal lands, much less the 192 countries in the world other than the United

¹⁵ CO₂-equivalent, or CO₂e emissions are used to provide a standard unit of measure taking into account the differing global warming potentials of different greenhouse gases.

¹⁶ Yann Robiou du Pont et al., *Equitable mitigation to achieve the Paris Agreement goals*, 7 Nature Climate Change 38 (2017), and Supplemental Tables 1 and 2. Quantities measured in GtCO₂eq include the mass emissions from CO₂ as well as the other well-mixed greenhouse gases (CO₂, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and SF₆) converted into CO₂-equivalent values, while quantities measured in GtCO₂ refer to mass emissions of just CO₂ itself.

¹⁷ *Id.*; Glen Peters, et al., *Measuring a fair and ambitious climate agreement using cumulative emissions*, 10 Environmental Research Letters 105004 (2015); Renaud Gignac and H. Damon Matthews, *Allocating a 2°C cumulative carbon budget to countries*, 10 Environmental Research Letters 075004 (2015).

¹⁸ Eco-Shift Consulting, *The Potential Greenhouse Gas Emissions of U.S. Federal Fossil Fuels* at 18 (2015), available at: <https://www.biologicaldiversity.org/publications/papers/Potential-Greenhouse-Gas-Emissions-U-S-Federal-Fossil-Fuels.pdf>.

States. Unleased federal fossil fuels comprise 91% of these potential emissions, with already leased federal fossil fuels accounting for as much as 43 billion tons CO₂e, essentially using up the entire remaining U.S. carbon budget.¹⁹ To stay within the U.S. carbon budget as needed to avoid catastrophic climate breakdown, “emissions from new federal fossil fuel leasing are precluded given the potential emissions from already-leased federal fossil fuels and those of non-federal fossil fuels.”²⁰

92. Between 2003 and 2014, approximately 25% of all United States and 3-4% of global fossil fuel greenhouse gas emissions have been attributable to federal minerals leased and developed by Interior.²¹ Continued leasing and development of federal fossil fuel resources commits the world to “extremely dangerous” warming well beyond the 1.5°C and 2°C thresholds. In short, *any* new leasing of federal fossil fuel resources is inconsistent with a carbon budget that would seek to avoid catastrophic climate change.

93. The production horizons for already leased federal fossil fuel resources underscore how unwarranted any additional leasing is. Comparing these production horizons to dates at which carbon budgets would be exceeded if current emission levels continue:

- Federal crude oil *already leased* will continue producing for 34 years beyond the 1.5°C threshold and 19 years beyond the 2°C threshold;
- Federal natural gas *already leased* will continue producing 23 years beyond the 1.5°C threshold and 8 years beyond the 2°C threshold;
- Federal coal *already leased* will continue producing 20 years beyond the 1.5°C

¹⁹ *Id.*

²⁰ *Id.* at 27.

²¹ See Energy Info. Admin., *Sales of Fossil Fuels Produced from Federal and Indian Lands, FY 2003 through FY 2014* (July 2015), available at:

<https://www.eia.gov/analysis/requests/federallands/pdf/eia-federallandsales.pdf>; see also Stratus Consulting, “Greenhouse Gas Emissions from Fossil Fuel Energy Extracted from Federal Lands and Waters: An Update” at 10 (2014), available at: <http://riggingthesystem.org/wp-content/uploads/2017/07/Stratus-Report.pdf>

(last accessed May 24, 2019).

threshold and 5 years beyond the 2°C threshold.²²

94. If new leasing and renewal of existing non-producing leases continues, by 2040 it will contribute about two-thirds of expected federal fossil fuel production (forecast based on EIA and other sources).²³ On the other hand, if new leasing ceases and existing non-producing leases are not renewed, 40% of forecast coal production could be avoided in 2025 and 74% of coal production could be avoided in 2040. As for oil and gas, 12% of oil production could be avoided in 2025 and 65% could be avoided by 2040 while 6% of natural gas production could be avoided in 2025 and 59% could be avoided by 2040.²⁴

95. This avoided production would significantly reduce future U.S. emissions, and is desperately needed to avoid catastrophic climate change. Cessation of new and renewed leases for federal fossil fuel extraction could keep up to 450 billion tons of CO₂e emissions from being emitted.²⁵

C. Climate Denial Under the Trump Administration

96. Despite the clear scientific evidence that greenhouse gas emissions are the primary cause of global climate change, with dire consequences for human civilization, the Trump Administration, including Defendants, has failed to take seriously the catastrophic risks of the climate crisis.

²² Dustin Mulvaney, *et al.*, EcoShift Consulting, *Over-Leased: How Production Horizons of Already Leased Federal Fossil Fuels Outlast Global Carbon Budgets*, 2, 5 (2016) (emphases added).

²³ Peter Erickson & Michael Lazarus, Stockholm Environmental Institute, *How Would Phasing Out U.S. Federal Leases for Fossil Fuel Extraction Affect CO₂ Emissions and 2°C Goals?* 12 (2016).

²⁴ *Id.* at 16.

²⁵ Eco-Shift Consulting, *supra* note 17, at 26.

97. President Trump has repeatedly questioned the clearly-established scientific link between greenhouse gas emissions and climate change. For example, analysis published in June 2017 found at least 115 instances of President Trump publicly expressing climate change skepticism, calling climate change or “global warming,” among other things, “mythical,” “non-existent,” an “expensive hoax,” and “based on faulty science and manipulated data.”²⁶ President Trump has repeatedly raised periods of cold weather as calling into doubt “global warming,” exhibiting a fundamental ignorance regarding the distinction between weather and climate. President Trump’s stated beliefs on climate change are fundamentally at odds with the consensus of the scientific community. For example, in an interview on 60 Minutes, President Trump declared: “I don’t know that it’s man-made. I’m not denying climate change, but it could very well go back.”

98. In keeping with the President’s professed skepticism regarding the scientific reality of human-caused climate change, the Trump Administration has repeatedly sought to undermine government programs designed to avert or mitigate the effects of climate change.

99. For example, CEQ withdrew the 2016 Climate Guidance on April 5, 2017. 82 Fed. Reg. 16,576 (2017). The public notice for CEQ’s withdrawal, however, included no explanation for the action, and did not call into question or alter the factual basis for the 2016 Climate Guidance’s determination regarding the cumulative, incremental nature of all sources contributing to climate change.

²⁶ Dylan Matthews, *Donald Trump has tweeted climate change skepticism 115 times. Here's all of it*, Vox, June 1, 2017, <https://www.vox.com/policy-and-politics/2017/6/1/15726472/trump-tweets-global-warming-paris-climate-agreement>.

100. The Trump Administration's unofficial policy of climate change denial does not change reality or science. In 2018, the Fourth National Climate Assessment identified future emissions of greenhouse gases as the main driver of future climate conditions, concluding that "[w]ith significant reductions in emissions, global temperature increase could be limited to 3.6°F (2°C) or less compared to preindustrial temperatures." In contrast, the risks of uncontrolled climate change are dire, with the National Climate Assessment concluding that "[w]ithout significant reductions, annual average global temperatures could increase by 9°F (5°C) or more by the end of this century compared to preindustrial temperatures." Impacts of climate change identified by the National Climate Assessment include warming and acidifying oceans, increases in U.S. and global temperatures, changes in precipitation patterns, increases in severe storms, rising global sea levels and increases in coastal flooding, and rapid Arctic changes.

101. Despite the overwhelming scientific consensus backing the conclusions of the National Climate Assessment, President Trump largely dismissed the report, stating during an interview that he was not one of the "believers" and did not view climate change as a pressing matter. "As to whether or not it's man-made and whether or not the effects that you're talking about are there, I don't see it," he said.

102. When asked by a reporter about the hundreds of billions of dollars in annual economic impacts of climate change projected by the National Climate Assessment, President Trump replied simply, "I don't believe it."

103. Administration spokesperson Sarah Huckabee Sanders has echoed the President, stating the Administration's position that the nearly 1,700 page National Climate Assessment, prepared by hundreds of scientific experts, was "not based on facts," and "not data-driven."

D. The Trump Administration’s Push for American “Energy Dominance”

104. In keeping with the President’s skepticism regarding the public health and welfare impacts of climate change, the Trump Administration has explicitly pursued a policy of American “energy dominance,” based on a dramatic expansion of fossil fuel development in the country, at the expense of environmental protections and public participation in agency decisionmaking.

105. In pursuit of this “energy dominance” policy, the Trump Administration has pursued a variety of tactics to roll back existing environmental regulations, speed up permitting for fossil fuel development projects, and otherwise free up the fossil fuel industries to maximize domestic production.

106. Since taking office in January 2017, the Trump Administration has been working systematically to dismantle and/or avoid protections for public lands and their resources in order to promote oil, gas, and other fossil fuel development. This new policy direction has been led by former Interior Secretary Ryan Zinke and Defendant David Bernhardt, a former energy industry lobbyist who is now Interior Secretary.

107. For example, in 2016, the Obama Administration adopted a regulation designed to reduce emissions of methane, a potent greenhouse gas, from oil and gas production on public lands. BLM, Waste Prevention, Production Subject to Royalties, and Resource Conservation, 82 Fed. Reg. 83,008 (Nov. 18, 2016) (“Methane Rule”). After an attempt to delay implementation of the rule was rejected by a federal district, Order Denying Motion to Transfer Venue and Granting Preliminary Injunction, *California v. BLM*, No. 3:17-cv-07187-WHO (N.D. Cal. Feb. 22, 2018), the Administration sought to rescind the Methane Rule, without offering any constructive policy proposals to manage this potent greenhouse gas. *See* U.S. Dep’t of Interior,

Waste Prevention, Production Subject to Royalties, and Resource Conservation; Rescission or Revision of Certain Requirements (“Methane Rescission Rule”), 83 Fed. Reg. 49,184, 49,184 (Sept. 28, 2018). Guardians and a coalition of other environmental groups have challenged the 2018 Methane Rescission Rule in federal court. Complaint for Declaratory and Injunctive Relief, *Sierra Club v. Zinke*, No. 3:18-cv-05984, 2018 WL 4694367 (N.D. Cal. Sept. 28, 2018).

108. The Obama Administration’s Methane Rule also clarified BLM’s authority under the Mineral Leasing Act, 30 U.S.C. § 223, to set royalty rates at *or above* 12.5%. But the Trump Administration has tried to walk back this authority, setting BLM royalty rates at the statutory minimum of 12.5%. 2018 Methane Rescission Rule, 83 Fed. Reg. at 49,184.

109. In January 2018, then-Interior Secretary Ryan Zinke announced a proposed radical revision to the National Outer Continental Shelf Oil and Gas Leasing Program (National Offshore Program) for 2019-2024, which proposes to make over 90 percent of the total Outer Continental Shelf acreage and more than 98 percent of undiscovered, technically recoverable oil and gas resources in federal offshore areas available to consider for future exploration and development. By comparison, Interior noted that the current program placed 94 percent of the Outer Continental Shelf off-limits. The Trump Administration’s National Offshore Program would open up the Atlantic coast for offshore drilling, reversing the Obama Administration’s removal of Atlantic waters from oil exploration, and also proposes the largest number of lease sales in U.S. history.

110. Interior has further touted plans to open the Arctic National Wildlife Refuge to oil and gas development, and BLM issued a Draft EIS in December 2018 that considers opening up to 100% of the Refuge’s 1.56-million-acre Coastal Plan area to oil and gas development. BLM estimates indicate that oil and gas development in the area could generate greenhouse gas

emissions of up to 5 million metric tons annually. Based on the Working Group's estimates, the annual social cost of carbon of this extraction would range from \$55 million to \$525, with a median value of \$210 million each year and continuing for decades.

111. The Trump Administration's obsession with American "energy dominance" has come at the direct cost of environmental protections. For example, soon after assuming office, President Trump signed Executive Order 13771 (Jan. 30, 2017), requiring agencies proposing any new regulations to identify "at least two existing regulations to be appealed."

112. Executive Order 13777 (Feb. 24, 2017), Enforcing the Regulatory Reform Agenda, further set forth the Trump Administration's policy of eliminating so-called "regulatory burdens," such as environmental protections. The Executive Order mandated the establishment of agency Regulatory Reform Task Forces to review existing regulations and make recommendations for "repeal, replacement, or modification" to promote the "regulatory reform agenda," including identification of any regulations that "eliminate jobs, or inhibit job creation."

113. On March 28, 2017, President Trump signed an Executive Order on Promoting Energy Independence and Economic Growth, which rescinded various executive policies designed to address the threat of climate change, including EO 13653 (Preparing the United States for the Impacts of Climate Change), Presidential Memorandum of September 21, 2016 (Climate Change and National Security), The President's Climate Action Plan, and the Climate Action Plan Strategy to Reduce Greenhouse Gas Emissions. The March 28, 2017 EO further directed all federal agencies to review all existing agency actions that "potentially burden the development or use of domestically produced energy resources, with particular attention to oil, natural gas, coal, and nuclear energy resources."

114. Following the Trump Administration’s deregulatory and “energy dominance” agenda, on March 29, 2017 Interior issued Secretarial Order 3349, entitled “American Energy Independence,” which directed bureaus and agencies within Interior to review a slew of actions related to energy development and climate change policy to identify any “burdens” on energy development, particularly fossil fuels and nuclear energy.

115. In its *Final Report: Review of the Department of Interior Actions that Potentially Burden Domestic Energy* (Nov. 1, 2017), Interior reported on its efforts “[t]o ensure energy policies receive the highest level attention” across the agency, to promote energy development on public lands, to eliminate regulatory burdens on energy production, and promote “efficient and effective processing of energy-related authorizations, permits, regulations, and agreements.”

116. Following this deregulatory agenda, the Trump Administration is further considering amending the CEQ NEPA regulations to make the NEPA process “more efficient [and] timely,” and has sought public comment on means to reduce “unnecessary burdens and delays” in the process. Council for Env’tl. Quality, Update to the Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act, 83 Fed. Reg. 28,591 (2018).

117. Thus, there remains a fundamental disconnect between the scientific community’s understanding of the causes and likely impacts of climate change and the management of our public lands predominantly for fossil fuel energy production. Defendants have consistently failed to take informed action to address climate change, as required by NEPA and Secretarial Orders 3226 and 3289, because they fail to take a hard look at the climate impacts of oil and gas leasing and development on our public lands, including the impacts from leasing the specific parcels in the Leasing Authorizations challenged herein. But as stated in Order 3289, BLM must “appl[y] scientific tools to increase understanding of climate change and to coordinate an effective

response to its impacts,” and “[m]anagement decisions made in response to climate change impacts must be informed by [this] science.”

E. BLM’s Instruction Memorandum 2018-034

118. In its *Final Report: Review of the Department of Interior Actions That Potentially Burden Domestic Energy*, Interior indicated that an existing BLM Instruction Memorandum governing BLM’s oil and gas leasing process, IM 2010-117, would be “replaced with revised guidance for the purpose of establishing greater efficiencies in the oil and gas leasing process.” In replacing the 2010 guidance, BLM sought to “to streamline the leasing process from beginning (i.e. receipt of an Expression of Interest) to end (competitively offering the nominated acreage in a lease sale),” and specifically evaluated ways to significantly reduce the review process timeframe from nomination to lease sale by half or more. Arbitrarily cutting short BLM’s lease sale review period, including its NEPA review period, was explicitly intended to allow industry to “execute exploration and production strategies earlier,” and Interior noted that “[r]educing the average time from acreage nomination to lease sale will be BLM’s measure of success.”

119. On January 31, 2018, BLM issued Instruction Memorandum 2018-034, titled “Updating Oil and Gas Leasing Reform – Land Use Planning and Lease Parcel Reviews.” IM 2018-034 overhauled the oil and gas leasing requirements established in IM 2010-117. Its stated purpose is to “simplify and streamline the leasing process to alleviate unnecessary impediments and burdens, to expedite the offering of lands for lease, and to ensure quarterly oil and gas lease sales are held consistently in accordance with the Mineral Leasing Act (30 U.S.C. § 226), Executive Order 137873, and Secretary Order 3354.”

120. In adopting the IM 2018-034, BLM clearly directs BLM staff to prioritize the speedy processing of oil and gas leases over environmental protection and public involvement, explicitly stating that the new policy is “intended to result in additional revenue from increased lease sales and reduced costs for NEPA review, planning, responses to protests, and associated oil and gas program costs.” BLM further notes that agency staff may be shifted from other program areas to meet “this high priority program area need.”

121. IM 2018-034 eliminated language in BLM’s prior IM 2010-117 that “there was no presumed preference for oil and gas” over other uses of public lands, and imposed substantive changes intended to promote oil and gas leasing and development, including:

- Rescinding BLM’s use of Master Leasing Plans, a front-end planning strategy designed to take a landscape-level approach to reviewing proposed leasing;
- Removing public participation requirements during the NEPA review of parcels identified for potential leasing, by replacing language from IM 2010-117 stating that BLM offices “will” provide for public participation during the NEPA process with a provision that they “may” provide for public participation;
- Stating that “BLM will no longer use a rotating schedule for lease sales, as described in IM No. 2010-117,” and instead directing that “the timeframe for parcel review for a specific lease sale is to be no longer than 6 months,” and each State Office “will review all lands that are identified in EOIs [Expressions of Interest] that were submitted before the EOI cutoff date for a particular quarterly lease sale and will offer all parcels determined to be eligible and available within the State Office’s jurisdiction”; and

- Announcing that BLM would no longer “defer” lease sales when an RMP amendment or revision is pending, but instead will use the existing RMP to approve the lease sale no matter how old or outdated it might be, and discouraging further environmental review by requiring Washington office approval of any decision to defer a nominated parcel for additional analysis.

122. IM 2018-034 also encourages BLM State Offices to shorten their review process before selling off oil and gas leases in numerous ways, including by:

- Providing that “site visits are not required and should only be considered when deemed necessary by the authorized officer on a case-by-case basis”;
- Encouraging BLM State or Field offices to use “existing NEPA document(s)” and a “Determination of NEPA Adequacy (DNA)” instead of new NEPA environmental reviews, and providing that no public comment period is required where a DNA is used;
- Reducing the time period between posting of a final sale notice and sale date from 90 days to 45 days;
- Reducing the protest period from 30 days to 10 days; and
- Allowing BLM to proceed with lease sales before it resolves protests, and giving BLM up to 60 days after receiving payment on a lease to resolve protests.

123. BLM regulations allow for lease sales to be suspended pending resolution of administrative protests and appeals, stating that “[t]he authorized officer may suspend the offering of a specific parcel while considering a protest or appeal against its inclusion in a Notice of Competitive Lease Sale.” 43 C.F.R. § 3120.1-3. Further, “the Assistant Secretary for Land and Minerals Management may suspend a lease sale for good and just cause after reviewing the

reason(s) for an appeal.” *Id.* IM 2018-034, however, eliminates BLM officers’ discretion to suspend the sale of protested parcels pending resolution of the protest, specifically providing that “[p]arcels subject to protests that are not resolved (i.e., pending protests) *will be offered for lease sale.*” (emphasis added).

124. BLM did not provide public notice, an opportunity for comment, or respond to comments prior to adopting IM 2018-034.

125. BLM is now implementing IM 2018-034 in its administration of federal minerals and oil and gas leasing on public lands, including in its review and Leasing Authorizations related to the September 2018 lease sale at issue here.

126. Guardians and the public are substantially injured and prejudiced by BLM’s “policy” changes undertaken through IM 2018-034, including by allowing BLM to avoid NEPA compliance in future oil and gas leasing, and its failure to allow adequate time or opportunity for public comment and protest of proposed oil and gas lease sales.

127. IM 2018-034 has substantially altered how BLM processes and approves oil and gas leases on public lands, and directly affects the rights of Guardians and members of the public to have notice, opportunity to comment, and petition the agency for relief. IM 2018-034 was issued without public notice or comment, despite its substantial changes and impacts upon public involvement. As alleged below, the portions of IM 2018-034 challenged herein constitute a legislative rule that Interior adopted in violation of APA, NEPA, and FLPMA’s requirements for notice, comment, and public involvement in federal lands’ decision-making, and thus is unlawful and should be reversed and set aside by the Court.

128. BLM oil and gas leasing decisions that have been made, or hereafter are made, under IM 2018-034 are unlawful and should be reversed and set aside as well, including the Leasing Authorizations challenged in this case for the September 2018 lease sale.

F. Greenhouse Gas Pollution from BLM's Oil and Gas Management Program

129. BLM is responsible for the management of nearly 700 million acres of federal onshore subsurface minerals. Based on 2012 figures, the ultimate downstream GHG emissions from fossil fuel extraction from federal lands and waters by private leaseholders accounts for approximately 21% of total U.S. GHG emissions and 24% of all energy-related GHG emissions.²⁷

130. As of October 2018, BLM managed lands contained 38,147 individual oil and gas lease parcels, covering over 25.5 million acres of public lands, on which 96,199 active producible wells are drilled. The area already leased for oil and gas extraction covers an area nearly as large as all federal lands combined in the State of New Mexico (27.5 million acres), and would cover more than 35% of the entire State of New Mexico.

131. BLM's Oil and Gas Leasing Program already contributes vast amounts of GHGs into the atmosphere, posing a threat to climate, the natural environment, and public health. In a single year (using 2012 figures), GHG emissions from oil extracted from federal lands resulted in the release of an estimated 2,999 tons of methane, 56,346,510 tons of carbon dioxide, and 2,985 tons of nitrous oxide, for a total release of 57,311,142 metric tons CO₂e.²⁸ That same year, GHG emissions from natural gas extracted from federal lands resulted in the estimated total release of 144,587,927 metric tons CO₂e. Accordingly, in a single year BLM's Oil and Gas

²⁷ Stratus Consulting, *supra* note 21, at 10.

²⁸ *Id.* at 11.

Leasing Program resulted in the release of an estimated 201,899,069 metric tons CO₂e. This is the equivalent of annual greenhouse gas emissions from over 58 coal-fired power plants.

132. In 2018, the U.S. Geological Survey (“USGS”) also released its first ever inventory of greenhouse gas emissions associated with federal coal and oil and gas production. The report revealed that federal fossil fuel production contributes to 24% of all U.S. carbon dioxide emissions and to nearly 25% of all U.S. greenhouse gas emissions.²⁹ New Mexico in particular was reported to be the source of 6% of all CO₂ emissions from federal fossil fuel production, higher than all but one other state. New Mexico was also found to be the source of 23% of all methane emissions from federal lands, higher than every state except Wyoming.

G. Oil and Gas Development in the Greater Carlsbad Region

133. Oil and gas development in the Greater Carlsbad region of southeast New Mexico and northwest Texas is central to the Trump Administration’s “energy dominance” strategy. This area is known to the oil industry as the Permian Basin, based on geologic nomenclature for the predominantly Permian-era oil- and gas-bearing formations in the region.

134. BLM’s Pecos District, consisting of the Carlsbad Field Office and Roswell Field Office, generally covers the New Mexico portion of the Greater Carlsbad region/Permian Basin, which includes all or part of Eddy, Lea, Chavez, Roosevelt, and Quay counties. All of the challenged Lease Authorizations relate to land within BLM’s Pecos District.

135. Oil and gas development has been ongoing in the Greater Carlsbad region for nearly a century; however, recent technological developments over the past 10 years have

²⁹ See Merrill, M.D. et al., 2018, *Federal lands greenhouse gas emissions and sequestration in the United States—Estimates for 2005–14: U.S. Geological Survey Scientific Investigations Report 2018-5131* at 1 (2018).

significantly lowered the costs of production and enabled a dramatic and unprecedented expansion in regional production.

136. Specifically, the widespread adoption of horizontal drilling and multi-stage hydraulic fracturing by the oil and gas industry has opened up significant areas of “tight oil” to production that was previously uneconomical to extract, thereby enabling a boom in oil and gas production in the Greater Carlsbad region.

137. The Permian boom is part of a broader expansion by the oil and gas industry into previously uneconomical tight oil and gas plays. According to the U.S. Energy Information Administration, in December 2018, U.S. shale and tight plays produced about 65 billion cubic feet per day of natural gas (70% of total U.S. dry gas production) and about 7 million barrels per day of crude oil (60% of total U.S. oil production). A decade ago, in December 2008, shale gas and tight oil accounted for only 16% of total U.S. gas production and about 12% of U.S. total crude oil production.³⁰

138. On November 28, 2018, Interior announced the results of a formal USGS assessment of the oil and gas resource potential of two of the geologic units within the Greater Carlsbad region’s Permian Basin, the Wolfcamp Shale and overlying Bone Spring Formation in the Delaware Basin. According to Interior, these two geologic units alone contain an estimated mean of 46.3 billion barrels of oil, 281 trillion cubic feet of natural gas, and 20 billion barrels of natural gas liquids.

139. According to this recent USGS assessment, the Wolfcamp Shale and Bone Spring Formation together constitute the largest unproven, technically recoverable oil and gas reserves

³⁰ EIA adds new play production data to shale gas and tight oil reports (Feb. 15, 2019), <https://www.eia.gov/todayinenergy/detail.php?id=38372#> (last accessed May 30, 2019).

in the world. These formations contain continuous, unconventional, or tight oil and gas resources that require unconventional drilling techniques, including horizontal drilling and multi-stage hydraulic fracturing, to extract.

140. As Dr. Jim Reilly, USGS Director explained, “In the 1980’s, . . . the Permian and similar mature basins were not considered viable for producing large new recoverable resources. Today, thanks to advances in technology, the Permian Basin continues to impress in terms of resource potential.” Dr. Reilly further characterized the oil and gas resources of the Greater Carlsbad region as “crucial” to ensuring American “energy dominance.”

141. Statistics from the U.S. Energy Information Agency show that oil and gas production in the Greater Carlsbad region has grown dramatically over the past ten years, and particularly in the last two years. Since 2010, oil production in the Permian Basin has grown from less than 1 million barrels per day to 4 million barrels per day, with production nearly doubling in the past two years alone. Tight oil production from the Wolfcamp Shale and Bone Spring Formation has risen from about 0.046 million barrels per day in January 2000, to 1.836 million barrels per day in January 2019, nearly a 40-fold increase in less than twenty years.

142. U.S. Energy Information Agency data shows that overall oil production in New Mexico has risen dramatically over the past decade. From an average daily production of less than 5.1 million barrels per month in 2009, production has skyrocketed to over 25 million barrels per month in January 2019.³¹ Oil production in New Mexico has nearly doubled in just the past two years.

³¹ EIA, *Petroleum & Other Liquids, Crude Oil Production*, https://www.eia.gov/dnav/pet/pet_crd_crpdn_adc_mbbl_m.htm.

143. Nearly one third of the United States' crude oil now comes from the Permian Basin/Greater Carlsbad region, making it the largest shale-oil producing region in the country. And oil and gas production from this region continue to grow rapidly.³²

144. BLM has played a critical role in facilitating the explosive growth in oil and gas production in New Mexico and the Greater Carlsbad region. Between 2009 and 2018, BLM issued leases covering over 450,000 acres of New Mexico public lands. Over 240,000 acres of leases were sold between 2015 and March 2019.

145. Between September 2017 and September 2018, the BLM lease sales challenged herein resulted in the selling off for oil and gas development 192 lease parcels covering approximately 62,000 acres of federal public lands in the Pecos District. In December 2018 and March 2019, BLM further auctioned off nearly 42,000 acres of additional public land in this same area. Additional BLM lease sales are already planned for June 2019, September 2019, and November 2019, with BLM proposing the further sale of more than 4,400 new acres in the Pecos District.

146. In FY 2018, BLM approved 1,169 Applications for Permit to Drill (APDs) in the Pecos District, approximately 29% of all APDs approved nationwide. As of September 30, 2018, some 934 APDs remained pending in the Pecos District, 41% of all APDs pending nationwide.

147. The Trump Administration has touted the significant royalties generated by the lease sales, noting that the September 2018 Greater Carlsbad lease sale generated nearly a billion

³² EIA, *This Week in Petroleum, Permian & Gulf of Mexico Regions Expected to Drive Continued Record-High U.S. Crude Oil Production Through 2020*, https://www.eia.gov/petroleum/weekly/archive/2019/190221/includes/analysis_print.php.

dollars, the largest dollar-value lease sale in the history of BLM's onshore oil and gas program.³³ But BLM has never attempted to perform a cost-benefit analysis of continued oil and gas leasing in the Greater Carlsbad region or otherwise taken a hard look into the significant costs associated with climate change, hazardous air pollution, water resources use and degradation, and other environmental impacts resulting from unconventional oil and gas development.

II. The Challenged BLM Final Agency Actions

A. September 7, 2017 Oil and Gas Lease Sale

148. On November 21, 2016, BLM released a list and map of 52 nominated parcels for inclusion in the September 2017 oil and gas lease sale.

149. On April 30, 2017, BLM released a "draft" EA and unsigned FONSI for public review and comment. The draft EA indicated that 65 parcels had been nominated for the September 2017 oil and gas lease sale, and included a "proposed action" that would lease 60 of those parcels, covering 15,731.9 acres.

150. On June 7, 2017, BLM released a lease sale notice, "final" EA, and unsigned FONSI, initiating a thirty-day administrative protest period for the September 2017 lease sale.

151. The final EA included a "preferred alternative" wherein 60 parcels, located in BLM's Pecos District and covering 15,731.9 acres, were included in the September 2017 lease sale. After parcel realignment, BLM identified 62 parcels covering an equivalent 15,731.9 acres in the agency's lease sale notice.

152. On July 6, 2017, Guardians timely filed an administrative protest of BLM's lease

³³ BLM, *Energy Revolution Unleashed: Interior Shatters Previous Records with \$1.1 Billion in 2018 Oil and Gas Lease Sales*, Feb. 6, 2019, <https://www.blm.gov/press-release/energy-revolution-unleashed-interior-shatters-previous-records-11-billion-2018-oil-and>.

authorizations for the September 2017 lease sale, objecting to the inclusion of all 62 of the parcels in BLM's Pecos District Office.

153. On September 7, 2017, BLM held the competitive oil and gas lease sale at the agency's New Mexico State Office in Santa Fe, New Mexico. BLM posted the sale results the same day, indicating that 61 of the 62 offered parcels had been sold, totaling 15,331.91 acres.

154. On March 30, 2018, more than six months after all parcels were sold, BLM denied Guardians' Protest of the lease authorizations and issued its Decision Record and signed FONSI for the September 2017 lease sale.

155. On March 30, 2018, BLM issued all 61 leases to Lessees.

156. On September 24, 2019, BLM's counsel informed Guardians' counsel that 18 of the 61 issued leases had been subsequently cancelled. According to BLM, one lease parcel was issued in error for lands already leased in a prior sale, while the other 17 parcels were cancelled non-payment of rental fees. ECF No. 29-1 (Declaration of Sheila Mallory) ¶ 3. Guardians has voluntarily dismissed these cancelled parcels from this litigation, subject to BLM's stipulation that the agency will prepare a new NEPA-compliant EA prior to any of the cancelled parcels being reinstated. ECF No. 29 (Joint Stipulation as to the Dismissal of Specific Leases); Mallory Dec. ¶¶ 4–5. This Amended Petition for Review is filed to clarify that these cancelled leases are not being challenged in this litigation.

B. BLM's December 7, 2017 Oil and Gas Lease Sale

157. On July 10, 2017, BLM released a list and map of 7 nominated parcels within the Carlsbad Field Office for inclusion in the December 2017 oil and gas lease sale.

158. On July 10, 2017, BLM released a "draft" EA and unsigned FONSI for public review and comment. The draft EA indicated that 7 parcels in the Carlsbad Field Office had been

nominated for the December 2017 oil and gas lease sale, and included a “proposed action” that would lease 7 of those parcels, covering 2,104.15 acres.

159. On August 7, 2017, Guardians timely submitted comments to BLM on the draft EA for the December 2017 lease sale.

160. On September 7, 2017, BLM released a lease sale notice, “final” EA, and unsigned FONSI, initiating a thirty-day administrative protest period for the December 2017 lease sale.

161. The final EA included a “preferred alternative” wherein 7 parcels covering 2,104.15 acres in the Carlsbad Field Office were included in the December 2017 lease sale.

162. On October 6, 2017, Guardians timely filed an administrative protest of BLM’s lease authorizations for the December 2017 sale, objecting to the inclusion of all 7 of the parcels in BLM’s Pecos District.

163. On December 7, 2017, BLM held the competitive oil and gas lease sale at the agency’s New Mexico State Office in Santa Fe, New Mexico. BLM posted the sale results the following day, indicating that all 7 of the offered parcels had been sold, totaling 2,104.15 acres.

164. On March 26, 2018, more than 3 months after all parcels were sold, BLM issued its Decision Record and signed FONSI for the December 2017 lease sale.

165. On March 30, 2018, BLM denied Guardians’ Protest of the December 2017 lease authorizations.

166. On March 30, 2018, BLM issued all 7 leases to Lessees.

C. BLM’s September 2018 Oil and Gas Lease Sale

167. On April 3, 2018, BLM released a list of 197 nominated parcels within the Pecos District Office for inclusion in the September 2018 oil and gas lease sale.

168. On April 20, 2018, Guardians submitted “scoping comments” on BLM’s proposal for the September 2018 oil and gas lease sale.

169. On July 23, 2018, BLM released a “final draft” EA and unsigned FONSI, but did not provide any opportunity for public comment on the draft EA. The draft EA indicated that 197 parcels in the Carlsbad Field Office had been nominated for the September 2018 oil and gas lease sale, and included a “proposed action” that would lease 173 of those parcels, covering 75,528 acres in the Pecos District, and an alternative action to lease 142 parcels and defer 31 parcels in light of significant risks to the City of Carlsbad’s groundwater-dependent public water supply.

170. On July 23, 2018, BLM also released a lease sale notice, identifying 142 parcels proposed for sale within the Pecos District and initiating the ten-day protest period for the September 2018 lease sale.

171. On July 30, 2018, Guardians timely filed an administrative protest of BLM’s lease authorizations for the September 2018 sale, objecting to the inclusion of all 142 of the parcels in the BLM’s Pecos District.

172. On September 5-6, 2018, BLM held the competitive oil and gas lease sale at the agency’s New Mexico State Office in Santa Fe, New Mexico. BLM posted the sale results on September 6, 2018, indicating that all 142 of the offered parcels had been sold, totaling 76,219.5 acres.

173. On October 22, 2018, more than a month after all parcels were sold, BLM denied Guardians’ Protest of the lease authorizations, and issued its final EA and signed FONSI for the September 2018 lease sale.

174. On October 22, 2018, BLM issued all 142 leases to Lessees.

D. BLM's Promulgation of IM 2018-034

175. On January 31, 2018, BLM promulgated IM 2018-034, "Updating Oil and Gas Leasing Reform – Land Use Planning and Lease Parcel Reviews," by memoranda from the Deputy Director, Policy and Programs, Exercising Authority of the BLM Director. IM 2018-034 overhauled the oil and gas leasing requirements established in IM 2010-117, affecting the substantive and procedural rights of Guardians', its members, and other member of the public interested in participating in BLM's oil and gas leasing process on public lands.

176. IM 2018-034 was issued without any prior public notice or opportunity for Guardians or other members of the public to provide comment on the significant changes established by IM 2018-034, which dramatically reduced public participation opportunities in BLM's Oil and Gas Leasing Program.

III. Environmental Impacts of the Lease Sales

A. Climate Impacts

177. BLM's purpose in issuing the 192 specific Lease Authorizations was explicitly to provide "opportunities for private individuals or companies to explore for and develop oil and gas resources on public lands. . . ." This private exploitation of public resources, however, will result in significant greenhouse gas emissions with profound implications for the global climate, significant degradation of air quality, particularly with respect to ozone pollution, the extraction and contamination of vast amounts of scarce groundwater, and the undermining of seismic stability in the region. The continued industrialization of public lands in the Greater Carlsbad region will further impact native wildlife and recreational opportunities.

1. Direct Impacts

178. BLM's environmental documents supporting the Lease Authorizations indicate that over 1,600 new oil and gas wells could foreseeably be developed on the leased parcels.

179. While representing only a small fraction of the total emissions resulting from the Lease Authorizations, the direct emissions from the three lease sales are still significant. BLM estimates annual per well emissions ranging from 94 to 137.7 metric tons of CO₂e. Thus, the September 2017, December 2017, and September 2018 lease sales are projected to result in direct wellhead emissions of 37,590 metric tons, 3,718 metric tons, and 151,324 metric tons per year, respectively.

180. A useful tool for evaluating the significance of these direct emissions is the well-established framework provided by the IWG's social cost of carbon tool. Simple calculations applying the SCC to GHG emissions from these lease sales offer a straightforward comparative basis for analyzing impacts, and identifying very significant costs. For example, applying the IWG central value of \$42 per ton of CO₂ results in an annual social cost of carbon (just for direct wellhead emissions) of \$1.58 million for the September 2017 lease sale; \$156,156 for the December 2017 lease sale; and \$6.36 million for the September 2018 lease sale, with projected costs ranging from \$413,490 to \$3.9 million; \$40,898 to \$390,390; and \$1.7 million to \$15.9 million, respectively.

181. Given an estimated twenty-year production period, direct well-head CO₂e emissions total 751,800 metric tons for the September 2017 lease sale, 74,360 metric tons for December 2017 lease sale, and 3,026,480 metric tons for the September 2018 lease sale.

182. Given the substantial direct wellhead emissions, the median social cost of carbon for the total direct wellhead emissions over a 20-year production period from each of the lease

sales is undoubtedly significant: \$31.6 million for the September 2017 lease sale; \$3.1 million for the December 2017 lease sale; and \$127.1 million for the September 2018 lease sale. Social cost of carbon estimates for the lease sales range from \$8.3 million to \$78.9 million, \$818,000 to \$7.8 million, and \$33.3 million to \$317.8 million, respectively.

2. Indirect Impacts

183. BLM's environmental documents show that the three lease sales are projected to collectively produce some 446 million barrels of oil and 1.8 trillion cubic feet of natural gas. Over BLM's twenty year estimated production period, this equates to some 61,000 barrels of oil and 243 million cubic feet of natural gas produced *each day*.

184. The Leasing Authorizations are intended to facilitate the extraction and ultimate use of these fossil fuels. While the exact destinations of extracted oil and natural gas may not yet be known, it is reasonably foreseeable that the vast majority of oil produced from the leased parcels will ultimately be refined into gasoline and used as a transportation fuel. Similarly, it is foreseeable that most of the natural gas is likely to be combusted for heating or to produce electricity. BLM acknowledges that it is possible to make reasonable estimates of the downstream, indirect combustion-related emissions of oil and natural gas produced from the leased parcels.

185. As BLM further acknowledges, the indirect downstream emissions generate the vast bulk of climate impacts caused by oil and gas development, dwarfing the direct wellhead emissions. For oil, BLM estimates that direct well-head emissions constitute only about 8% of emissions, transportation to refineries is about 10%, with "fully 80%" of emissions coming from combustion of the refined product as a transportation fuel.

186. For the September 2017 lease sale, BLM estimates downstream combustion emissions of 57,970,392 metric tons; 6,185,867 metric tons for the December 2017 lease sale; and 225,099,779 metric tons for the September 2018 lease sale.

187. Applying the social cost of carbon tool to the downstream indirect emissions from the three lease sales, as estimated by BLM, reveals a staggering climate cost from the Leasing Authorizations. At \$42 per ton, indirect emissions result in a median social cost of carbon of \$2.5 billion for the September 2017 lease sale; \$266 million for the December 2017 lease sale; and \$13.1 billion for the September 2018 lease sale; with social cost estimates for the three lease sales ranging from \$638 million to \$6.1 billion; \$68 million to \$650 million; and \$2.5 billion to \$23.6 billion, respectively.

188. BLM completely fails to calculate or account for the environmental impacts of indirect emissions associated with the transportation of oil and gas to refineries, despite BLM recognizing that such transportation constitutes a significant portion of emissions, estimated at about 10% of total emissions from oil production.

3. Cumulative Impacts

a. Greenhouse Gas Pollution from BLM's Oil and Gas Management Program

189. BLM is responsible for the management of nearly 700 million acres of federal onshore subsurface minerals. As of 2018, BLM managed lands contained 38,147 individual oil and gas lease parcels, covering over 25.5 million acres of public lands, on which more than 96,000 active producible wells are drilled.

190. NEPA's implementing regulations define a "program" as "a group of concerted actions to implement a specific policy or plan; systematic and connected agency decisions allocating agency resources to implement a specific statutory program or executive directive." 40

C.F.R. § 1508.18. BLM’s oil and gas leasing activities fall within this definition of a program because they are “connected agency decisions allocating agency resources to implement” the MLA for the purpose of exploration or development of oil and natural gas resources. *Id.*

191. BLM expressly refers to its oil and gas leasing activities as a program. According to BLM’s website, “BLM manages the Federal government’s onshore oil and gas program with the goals of facilitating safe and responsible energy development while providing a fair return for the American taxpayer.”

192. All of the leasing authorizations challenged herein are part of BLM’s comprehensive Oil and Gas Leasing Program to implement the Mineral Leasing Act.

193. BLM’s Oil and Gas Leasing Program already contributes vast amounts of GHGs into the atmosphere, posing a threat to climate, the natural environment, and public health. In a single year (using 2012 figures), GHG emissions from oil extracted from federal lands resulted in the release of an estimated 57 million metric tons of CO₂e.³⁴ That same year, GHG emissions from natural gas extracted from federal lands resulted in the release of an estimated 144 million tons of CO₂e pollution. Accordingly, in a single year BLM’s Oil and Gas Leasing Program resulted in the release of more than 200 million tons of CO₂e pollution. This is the equivalent of annual greenhouse gas emissions from over 58 coal-fired power plants.

194. The ultimate downstream GHG emissions from fossil fuel extraction from federal lands and waters by private leaseholders accounts for approximately 21% of total U.S. GHG emissions and 24% of all energy-related GHG emissions, based on 2012 figures.³⁵

195. In 2018, USGS also inventoried greenhouse gas emissions associated with federal

³⁴ Stratus Consulting, *supra* note 20, at 11.

³⁵ *Id.* at 10.

coal and oil and gas production, revealing that fossil fuel production on federal public lands contributes to 23.7 % of all U.S. carbon dioxide emissions, or 1.279 billion metric tons.³⁶ Considering releases of methane and other greenhouse gases, federal fossil fuel production generates nearly 25% of all U.S. greenhouse gas emissions.

b. Greenhouse Gas Pollution from the Greater Carlsbad Region

196. The Leasing Authorizations threaten a continuing expansion of oil and gas development in the Permian Basin/Greater Carlsbad region, which has already undergone a dramatic boom in production over the past decade. While BLM's environmental analysis completely ignores any production in the region outside the individual parcels considered in each lease sale, understanding the broader context of the Leasing Authorizations requires the agency to grapple with the staggering production boom in the region.

197. As noted above in Section I.G above, statistics from the U.S. Energy Information Agency show explosive growth in oil and gas production in the Greater Carlsbad region over the past ten years, and particularly in the last two years. Oil production in the Permian Basin has more than quadrupled since 2010, with production nearly doubling in the past two years alone. Oil production in New Mexico has also expanded nearly five-fold over the past decade.

198. Nearly one-third of the United States' crude oil now comes from the Permian Basin/Greater Carlsbad region, making it the largest shale-oil producing region in the country. Oil and gas production from this region continue to grow rapidly, and projections show the potential for continued growth given the large technically recoverable reserves identified in the region.

³⁶ See M.D. Merrill, et al., USGS, *supra* note 28, at 1.

199. According to a recent USGS assessment, the Wolfcamp Shale and Bone Spring Formation together constitute the largest unproven, technically recoverable oil and gas reserves in the world. Tapping these fossil fuel resources, however, is fundamentally at odds with the civilizational imperative to avoid catastrophic climate change, as the carbon content of these recently-identified reserves – 19.9 billion tons of CO_{2e} from oil; 15.5 billion tons of CO_{2e} from natural gas; 5.2 billions tons of CO_{2e} from natural gas liquids; 40.6 billion tons of CO_{2e} total – exceeds the total U.S. carbon budget needed to limit warming to an average of 1.5°C and potentially the total budget needed for a 2°C target. And these two formations represent just a fraction of total reserves in the Permian Basin/Greater Carlsbad region. At the median social cost of carbon (\$42/ton), full extraction of these reserves would have a negative social cost of *1.7 trillion dollars*, with an estimated range of \$447 billion to \$4.3 trillion.

200. A recent report produced by Oil Change International confirmed the need to start quickly tapering fossil fuel production in order to reduce greenhouse gas emissions and meet scientifically-established climate targets. Despite not taking into account the USGS's brand-new assessment of the Wolfcamp Shale and Bone Spring Formation, the report still specifically highlighted the Permian Basin of New Mexico and Texas as the potential source of more than 50 billion metric tons of carbon emissions, which if unleashed, would undermine global climate objectives, at a social cost of *2.1 trillion dollars*, with a range of \$550 billion to \$5.3 trillion.

201. Thus, the cumulative impacts of oil and gas development in the Permian Basin/Greater Carlsbad region have profound implications for the global climate and are, by any definition, highly significant.

202. Between September 2017 and September 2018, BLM sold off leases covering nearly two hundred parcels totaling about 62,000 acres of federal public lands in the Pecos

District for oil and gas development. BLM continues to sell off public lands in the Pecos District for oil and gas development without considering the cumulative impacts of these decisions. BLM sold off more than 41,000 acres in December 2018 and more than 1,000 additional acres in March 2019, all in the Pecos District. And BLM has already proposed sales of an additional 1,560 acres in June 2019, and 2,848 acres in September 2019, and an additional sale is already scheduled for November 2019.

203. BLM never attempts to assess the cumulative impact of the three challenged lease sales together. However, by adding up direct wellhead emissions for the three lease sales, as estimated in BLM's separate EAs, a total of 3.9 million metric tons of CO₂e emitted over twenty years can be calculated. These emissions have a median social cost of carbon of \$162 million, and a social cost ranging from \$42.4 million to \$404.5 million.

204. When BLM's calculations of downstream emissions for the three lease sales are taken together, end use combustion of the oil and gas extracted from the lease parcels would generate approximately 289 million metric tons of CO₂e. Over the twenty-year projected development period, this would add more than 14 million additional metric tons of CO₂e to the atmosphere each year, and measurably increase total U.S. greenhouse gas emissions.

205. Further connecting the dots for BLM based on the agency's own data, full development of the three challenged lease sales would increase emissions from the Permian Basin federal mineral estate by 48%, from 30.6 million metric tons/year to 45.2 million metric tons/year.

206. Even further, the carbon emissions generated from the challenged lease sales would take up as much as 1.2% of the entire U.S. carbon budget needed to limit warming to 1.5°C and 0.9% of total U.S. carbon budget for a 2°C target. Critically, this carbon budget is not

an annual total, but a measure of the amount of greenhouse gas pollution that can *ever* be emitted while avoiding catastrophic climate change.

207. At the median \$42/metric ton value for the social cost of carbon, the cumulative impacts of the carbon emissions from the three challenged lease sales alone total *\$12.2 billion dollars*, with a range of \$3.2 billion to \$30.7 billion. And this figure does not account for significant indirect emissions from oil and gas transportation and refining activities.

208. BLM statistics demonstrate a flood of oil and gas drilling activity in the Greater Carlsbad region. In FY 2018, BLM approved 1,169 APDs in the Pecos District, approximately 29% of all APDs approved nationwide. As of September 30, 2018, some 934 APDs remained pending in the Pecos District, 41% of all APDs pending nationwide. BLM's 2014 Reasonably Foreseeable Development Scenario projects this to continue for years, estimating that 16,000 new oil and gas wells will be drilled in the area over the next 20 years. BLM never assessed the cumulative impacts of this ongoing and reasonably foreseeable future development before issuing the Leasing Authorizations.

209. Based on BLM estimates for carbon emission factors for downstream combustion, the current 4 million barrel per day oil production rate of the Permian Basin is coming at a cost of 1.72 million tons of CO₂e per day, and the 13 billion cubic feet per day of gas production is resulting in 715,000 tons of CO₂e emitted per day. Thus, oil and gas production in the Permian is spewing out 2.4 million tons of CO₂e each day. At this current rate, Permian oil and gas production in 2019 will result in some 889 million tons of carbon pollution being contributed to the atmosphere.

210. In 2019 alone, oil and gas production in the Permian Basin/Greater Carlsbad region will thus use up between 1.6% and 3.5% of the *total* remaining U.S. carbon budget

needed to limit warming to 1.5°C, and between 0.7% and 2.6% of the total U.S. budget for a 2°C target. Again, this is not an annual budget, but an estimate of the *total* future carbon emissions that can *ever* be emitted to avoid the worst impacts of the climate crisis.

211. Further, based on current production rates, Permian Basin/Greater Carlsbad regional oil and gas production in 2019 will come at an *annual* median social cost of carbon of more *than \$37 billion dollars*, with a range from \$9.8 billion to \$93 billion in costs each year. And actual social costs are likely to exceed this staggering figure, as Permian production continues to grow rapidly.

212. By any measure, the cumulative greenhouse gas emissions and climate change impacts of oil and gas production in the Greater Carlsbad region/Permian Basin are incredibly significant.

213. Despite the significant costs imposed by rapidly expanding oil and gas production in the Greater Carlsbad region in the face of the climate crisis, BLM continues to offer public lands for sale as fast as possible, without considering the cumulative implications of its oil and gas leasing program on the global climate. BLM's actions pose a grave threat to the stability of the global climate and the health and welfare of all Americans.

B. Fracking Impacts

214. Hydraulic fracturing, or “fracking,” is an oil and gas drilling “stimulation” technique involving the high-pressure injection of large quantities of water, proppants (typically sand), and chemical additives into the wellbore to fracture the targeted geologic formations to enhance the release of oil and natural gas. Some variation of oil and gas stimulation has been used in the Greater Carlsbad region since the 1950s. However, these early stimulation techniques are vastly different from the type of large-volume multi-stage fracking techniques currently

employed. Neither the current Carlsbad RMP/EIS (adopted in 1988, amended in 1997) nor the Roswell RMP/EIS (adopted in 1997) analyzes the significant impacts posed by multi-stage hydraulic fracturing and horizontal drilling.

215. Over the last 15 years, advances in horizontal drilling technology combined with multi-stage and multi-zone fracking have enabled energy development that previously was uneconomic, including in the Greater Carlsbad region. Specifically, improvements and innovations in horizontal drilling technology and multi-lateral hydraulic fracturing have enhanced the economics of developing the Greater Carlsbad region's Permian Basin tight oil deposits.

216. Hydraulic fracturing of horizontal shale wells is generally performed in stages. The well is first drilled vertically down to the targeted shale bed or other tight oil deposit. From there, the drill hole is curved so that the trajectory of the well becomes horizontal. The well is then drilled horizontally for up to 2 miles or more. During the multi-stage fracking process, a series of explosive charges are set through the producing interval to perforate the production liner and casing to create small fractures in the targeted formation. A fracking fluid mixture is then injected into the formation, at high pressure, to create cracks or fractures. The fluids open or enlarge fractures that typically extend several hundred feet, but can extend as much as 2,000 feet from the well bore.

217. Horizontal drilling and multi-stage hydraulic fracturing can have significant environmental impacts that differ in both magnitude and type from conventional oil and gas drilling techniques.

1. Air Quality

218. Oil and gas development and production, particularly when horizontal drilling and

multi-stage fracking are involved, release significant amounts of nitrogen oxides (“NOx”), as well as volatile organic compounds (“VOCs”) and other Hazardous Air Pollutants (“HAPs”), which contribute to air pollution. Horizontally-drilled wells emit over 250 percent more air pollutants than vertical wells. Each horizontal well produces 11.88 more tons of VOCs and 1.13 more tons of HAPs than each vertical well.

219. NOx and VOCs react to form ozone, a pollutant with serious health risks. According to the EPA, the oil and gas industry is the largest industrial source of VOC emissions, which contribute significantly to the formation of ground-level ozone. Oil and gas production also releases air toxics such as benzene, ethylbenzene, and n-hexane, which are “pollutants known, or suspected of causing cancer and other serious health effects.” The EPA reports that the oil and gas industry “emits 2.2 million tons of VOCs, 130,000 tons of air toxics, and 16 million tons of greenhouse gases (methane) each year (40% of all methane emission in the U.S.). The industry is one of the largest sources of VOCs and sulfur dioxide emissions in the United States.”

220. Exposure to ozone is a serious concern as it can cause or exacerbate respiratory health problems, including shortness of breath, asthma, chest pain and coughing, decreased lung function and even long-term lung damage, all of which can contribute to premature deaths. Ozone levels in the Greater Carlsbad region already threaten human health, and BLM’s Leasing Authorizations will only exacerbate this existing problem. In recent years, the Greater Carlsbad region has seen elevated monitored levels for the 8-hour ozone National Ambient Air Quality Standard (“NAAQS”). According to data from the EPA,³⁷ Eddy and Lea Counties and Carlsbad

³⁷ U.S. EPA, Outdoor Air Quality Data, Download Daily Data, <https://www.epa.gov/outdoor-air-quality-data/download-daily-data> (last accessed Feb. 22, 2019).

Caverns National Park each experienced a significant number of ozone exceedances in 2017 and 2018.

221. EPA data now indicates that both air quality monitors in Eddy County (350153001, 350151005) are in an undeclared state of non-attainment with the NAAQS for ozone, as the three-year averages of the annual fourth-highest maximum daily ozone concentrations currently exceeds 70 ppb at each of these sites, based on 2016, 2017, and 2018 data.

222. EPA monitoring data for Lea County (350250008) currently reflects a three-year average of the annual fourth-highest maximum daily ozone concentrations of 70 ppb exactly, just barely meeting the NAAQS standard. But with the fourth highest daily maximum concentration in 2018 substantially exceeding 70 ppb (76 ppb), if air quality conditions do not improve, much less worsen (as is likely), then Lea County will soon join Eddy County in an undeclared state of non-attainment.

223. The Carlsbad Caverns National Park Monitor³⁸ is also now regularly exceeding the 70 ppb 8-hour ozone NAAQS, recording over 60 exceedances in 2018. In fact, based on the Park Service's own data for 2016, 2017, and 2018, the National Park is currently in an undeclared state of non-attainment with the 8-hour ozone NAAQS, based on the three-year average of the annual fourth-highest maximum daily ozone concentrations, which now exceeds 70 ppb.

³⁸ Ozone data for Carlsbad Caverns National Park was obtained from: National Park Service, Access to Gaseous Pollutant and Meteorological Data: <https://ard-request.air-resource.com/monhistory.aspx>.

224. BLM acknowledges that oil and gas development causes air quality problems, including contributing to ozone pollution. But BLM fails to quantify or otherwise assess the significance of ozone pollution generated from oil and gas development on the leased parcels, concluding without any scientific support that “[t]he additional NO₂ and VOCs emitted from any oil and gas development on these leases are likely too small to have a significant effect on the overall ozone levels of the area.” BLM fails to place the individual lease sales in context of the regional boom in oil and gas development and production and never considers the cumulative impacts of the 192 Leasing Authorizations challenged herein in combination with past, present, and future oil and gas development in the area.

225. BLM’s failure to take a hard look at ozone pollution is particularly problematic given the agency’s recent projections that both the Carlsbad Caverns and Carlsbad in-town ozone monitors will exceed ozone standards in the near future. Carlsbad RMP-DEIS at 4-258. In fact, this projection has already come true. Thus, there is no room for growth in emissions that contribute to these harmful levels of ozone pollution in the Greater Carlsbad region, in particular NO_x and VOCs. Any increase in emissions of these ozone precursors will exacerbate the negative health effects from already high levels of ozone in the region. The expansion of oil and gas development in the Pecos District Office has the potential to significantly add to emissions of NO_x and VOCs, exacerbating the region’s existing ozone problem.

226. Oil and gas development using horizontal drilling and multi-stage fracking can also affect the area’s viewshed in a number of ways. Ozone is also the main component of smog, and development of the 192 challenged leases using horizontal drilling and multi-stage fracking will result in significant visibility impacts to the general area, as well as Class I areas such as the adjacent Carlsbad Caverns National Park. Gas flares from development of over 1,600 new wells

on the 192 leases will create light pollution which, when combined with smog, will interfere with the unobstructed viewshed and stargazing in Class I areas such as the adjacent Carlsbad Caverns National Park.

2. Water Resources Impacts

227. Fracking has been documented to cause contamination of groundwater aquifers and requires huge amounts of water, a significant concern in the arid Southwest.

228. In the first several days to weeks after the multi-stage fracking process, the well pressure is released and a portion of the fracking fluid—known as “flowback”—returns to the surface of the wellbore. Over longer time periods, water naturally present in the targeted formation—known as “produced water”—continues to flow through the well to the surface. The flowback and produced water typically contain both the injected chemicals and naturally occurring contaminants such as brines, heavy metals, radionuclides, and hydrocarbons. Very small quantities of some toxic fracking chemicals, such as benzene, are capable of contaminating millions of gallons of water.

229. Fracking fluid is a conglomeration of various chemicals and compounds, many of which are highly toxic. EPA has noted that a 3 million gallon fracturing operation generally uses 15,000 to 60,000 gallons of chemical additives. Many of these fracking fluid chemicals are known to be toxic to humans and wildlife, and several are known to cause cancer. Toxic substances used in fracking include petroleum distillates such as kerosene and diesel fuel (which contain benzene, ethylbenzene, toluene, xylene, naphthalene and other chemicals); polycyclic aromatic hydrocarbons; methanol; formaldehyde; ethylene glycol; glycol ethers; hydrochloric acid; and sodium hydroxide.

230. Given the use of such chemicals and their presence in flowback and produced

water, the contamination of domestic and agricultural water supplies from multi-stage hydraulic fracturing is a serious risk. Moreover, if the wellbore is not properly sealed, cased, or its integrity is otherwise compromised, chemicals and other toxic substances can escape as they move through the well. The fracking fluid can also migrate underground, through natural and induced fractures, and lead to contamination of groundwater. Active and abandoned wells can also serve as pathways for the migration of contaminants into water sources. Spills of fracking fluids including the flowback can occur on the surface during storage, transportation and/or disposal.

231. Reporting from New Mexico has acknowledged a proliferation of “frack hits,” or “downhole communication,” where new horizontal drilling for oil is communicating with both historic and active vertical wells. This is a significant development that could result in well blowouts, contamination of resources, and conflict over who is responsible for liabilities and costs of such impacts.

232. Fracking has been well documented to cause groundwater contamination, from Wyoming to Pennsylvania. But “experts say that nowhere is that risk greater than in southeast New Mexico.” As a recent Assistant Commissioner in the New Mexico State Land Office, which manages nearly 2 million acres of state land for energy production, stated, “Conditions here [in New Mexico] are unique.... The volumes of water the industry uses are so prolific. The disposal problems are more pronounced. The potential for something to go wrong is higher.”³⁹

233. Many of the challenged leases in southeastern New Mexico are located in karst areas, which is a topography generally formed by the erosion of limestone or gypsum by

³⁹ Keith Schneider, New Mexico’s Oil Boom is Raising a Lot of Questions about Water, Los Angeles Times (Mar. 26, 2018), available at: <https://www.abqjournal.com/1150794/heres-why-new-mexicos-oil-boom-is-raising-a-lot-of-questions-about-water.html>.

dissolution, which produces underground drainage systems with fissures, sinkholes, and caves. Due to the highly porous nature of karst formations, there is a heightened risk of groundwater contamination in karst areas.

234. A dye tracer study conducted by a BLM scientist in the Carlsbad Field Office found “positive connections between the oil and gas drilling operations and several critical water supplies” in the area.⁴⁰ Tracing dyes mixed into drilling fluids were later detected in area wells and springs, providing clear evidence of a hydrologic connection between drilling operations and water supplies and indicating that “failures in the production casing and cementing may also allow hydrocarbons to enter the aquifers.” This BLM study refutes BLM’s continued assertion that proper construction practices, drilling practices, and BMPs can eliminate significant adverse impacts to area aquifers. To the contrary, BLM’s own scientists have concluded that: “The initial results are conclusive that the drilling fluids do enter the aquifers.”

235. New Mexico state records document tens of thousands of spills in the Greater Carlsbad region from the oil and gas industry, including releases of oil and produced water, and show hundreds of instances of oil and gas operations polluting groundwater, the source of drinking water for approximately 90% of the state’s residents, and the vast majority of people living in the Greater Carlsbad region.

236. Groundwater contamination can also result from the subsurface injection of produced water, the predominant method for wastewater disposal from oil and gas development in the Greater Carlsbad region. The EPA recommends strict limitations on injection pressures for

⁴⁰ James Goodbar, Bureau of Land Mgmt., Dye Tracing Oil and Gas Drilling Fluid Migration Through Karst Aquifers: A Pilot Study to Determine Potential Impacts to Critical Groundwater Supplies in Southeast New Mexico, USA.

disposal wells “to prevent fracturing of the confining zone and possible contamination of underground sources of drinking water,” suggesting a serious risk that water back pressures may cause a release of produced and flowback water into the water-bearing strata.

237. EPA’s National Underground Injection Control Inventory for 2016 identifies 951 Class II disposal wells, and 3,420 Class II recovery wells in New Mexico, not including tribal lands. There are reportedly more than 720 active disposal wells in New Mexico’s Greater Carlsbad region. BLM has never assessed the cumulative impacts and risks of these disposal wells on New Mexico’s water resources and environment.

238. In addition to the significant risk of groundwater contamination from development of the challenged leases, there is also a significant risk of drawdown of groundwater aquifer levels because horizontal drilling and multi-stage fracturing requires high volumes of water. Groundwater drawdown could significantly impact the land, wildlife, livestock, and human communities in and around the challenged leases. This court has previously recognized that “[i]t can take five to ten times more water to frack a directionally drilled well than a vertical well.” *Diné Citizens Against Ruining Our Env’t v. Jewell*, No. CIV 15-0209 JB/SCY, 2015 WL 4997207, at *11 (D.N.M. Aug. 14, 2015), *aff’d*, 839 F.3d 1276 (10th Cir. 2016).

239. BLM acknowledges that oil and gas development poses a risk of contaminating the Capitan Aquifer that supplies the City of Carlsbad and surrounding ranches with fresh water, but concludes – in reliance on the 2018 Draft RMP EIS – that “proper construction practices, drilling practices, and BMPs” will prevent “significant adverse impact to groundwater aquifers.” In other words, BLM assumes that drilling will be “properly implemented” when each of over 1,600 new oil and gas wells are drilled on the 192 leased parcels. BLM completely ignores

substantial evidence in the record showing that oil and gas drilling is not always “properly implemented” and aquifer contamination from oil and gas drilling is already occurring in the Greater Carlsbad region. The agency fails to take a hard look at the significant risk of spills, blowouts, and other accidents leading to contamination of vital water resources.

240. Further, overdrafting groundwater not only threatens the sustainability of the primary water supply for homes, businesses, and agricultural users in the Greater Carlsbad region, but threatens the stability of the land itself. Land subsidence has been frequently documented as groundwater has been pumped out from underlying aquifers. BLM fails to acknowledge the risk that continued oil and gas development in the Greater Carlsbad region will lead to land subsidence caused by excessive groundwater pumping needed to meet the demands of multi-stage hydraulic fracturing and horizontal drilling technologies.

3. Other Impacts of Oil and Gas Development and Fracking

241. Environmental impacts for horizontal drilling and multi-stage fracking differ in both type and magnitude from those associated with conventional, vertical drilling practices discussed in BLM’s planning documents. For example, horizontal wells have more than double the surface impact of vertical wells (5.2 acres vs. 2 acres). There are increased noise impacts from a horizontally-drilled well because both drilling and multi-stage fracking treatments take longer to complete.

242. Horizontal drilling and multi-stage fracking also requires the development of new roads, gathering pipelines, and other infrastructure. Moreover, each well typically requires thousands of truck trips to transport the water, nitrogen, and chemicals necessary for well completion and subsequent disposal of flowback and produced water, significantly higher than what is required to support traditional drilling practices.

243. Apocalyptically, hydraulic fracturing and underground wastewater injection have even been well-documented as causing earthquakes, including in areas not previously seismically active prior to oil and gas development. In the Permian Basin, USGS recently documented the frequency of earthquakes measuring at least 2.5 on the Richter scale as having tripled in just one year. Since 1999, more than two dozen earthquakes have been recorded in the oil and gas producing area northwest of Carlsbad within the Carlsbad Field Office, including in areas leased as part of the challenged lease sales. The Texas Railroad Commission (which governs oil and gas development in Texas) is currently considering new regulations on wastewater injection to respond to this increased seismic activity in the Greater Carlsbad region/Permian Basin.

244. A 2018 study by researchers Southern Methodist University indicated that a large swath of the Permian Basin is “heaving and sinking,” likely as a result of decades of oil and gas production. “The ground movement we’re seeing is not normal,” stated SMU geophysicist Zhong Lu, a global expert in satellite radar imagery analysis. “These hazards represent a danger to residents, roads, railroads, levees, dams, and oil and gas pipelines, as well as potential pollution of groundwater.” Co-author Jin-Woo Kim, a research scientist in the SMU Department of Earth Sciences, found the region to be “punctured like a pin cushion with oil wells and injection wells since the 1940’s,” and he attributed the ground movement to oil and gas activity.⁴¹

⁴¹ Carolyn Davis, *Permian’s Shifting, Sinking Ground ‘Not Normal,’ Say SMU Researchers*, *Natural Gas Intelligence* (Mar. 26, 2018), available at: <https://www.naturalgasintel.com/articles/113821-permians-shifting-sinking-ground-not-normal-say-smu-researchers>.

245. Dissolution of underground salt layers by the oil and gas industry for brine production has also resulted in the formation of massive hollowed out caverns which have now collapsed into “giant desert craters” northeast of Carlsbad. A new cavern has recently been identified in the City of Carlsbad, underlying several businesses and a major highway. The City of Carlsbad has agreed to spend \$40 million just to study how to prevent the collapse of this cavern, which – in the absence of expensive efforts with an unknown potential for success – is expected to collapse in the next several years.

IV. Inadequacy of BLM’s Review

A. BLM’s Tiering to Out-of-Date Planning Documents

246. BLM completed the current RMP for the Carlsbad Field Office in 1988, and amended in 1997. The BLM is currently in the process of preparing a new Carlsbad RMP/EIS. Indeed, the BLM released a draft RMP and EIS on August 3, 2018.

247. The draft Carlsbad RMP and EIS update the management of lands within the Carlsbad Field Office. The Carlsbad Field Office includes all of Eddy and Lea Counties and a portion of Chaves County. 164 or 85% of the challenged Leasing Authorizations will be subject to the new Carlsbad RMP and DEIS.

248. The impacts of oil and gas development on the numerous leased parcels in the Carlsbad Field Office are potentially significant and unanalyzed in the existing RMP-EIS. BLM has failed to analyze the impacts from the use of hydraulic fracturing coupled with horizontal drilling, a more intense form of oil and gas development. Thus, BLM is failing to account for potentially significant impacts in its current RMP-EIS. Indeed, BLM’s Analysis of the

Management Situation (“AMS”)⁴² for the existing RMP-EIS essentially admits that this is one of the reasons for updating the document. *See* AMS at 2-100 (“Since 2006, the percentage of wells drilled horizontally has increased substantially.”). Data from the Energy Information Administration (“EIA”) supports this conclusion.

249. Similarly, the “current” 1997 RMP/EIS for the Roswell Field Office is more than 20 years old. As discussed above, oil and gas extraction techniques have drastically changed since 1997 and with this change comes increased, potentially significant impacts. The current RMP-EIS did not take these changes into account.

250. BLM’s recent reasonably foreseeable development scenario process further highlights the unexpectedly rapid pace of development in the Greater Carlsbad region, fueled by new unconventional drilling techniques. After completing a new scenario in 2012, BLM soon realized that it was already outdated and failed to accurately predict the oil and gas development that was occurring. So BLM contracted to have the scenario updated just two years later. This BLM report explained, “[d]ue to the dramatic growth in development since 2010 (specifically the Bone Spring) the initial RFD quickly became outdated; missing areas of development that were not active or predicted.”

251. According to BLM’s Analysis of the Management Situation for the Bureau of Land Management Carlsbad Field Office, “[t]he 1988 Carlsbad RMP and subsequent amendments did not make decisions for [greenhouse gases] (BLM 1988).” The 1997 Roswell RMP/EIS also did not address climate change or calculate direct, indirect, and cumulative climate impacts.

⁴² The AMS for the Carlsbad Field Office is available online at: https://eplanning.blm.gov/epl-front-office/projects/lup/64444/77501/86227/AMS_Compiled.pdf.

252. Furthermore, since the Carlsbad and Roswell RMPs were last updated, air quality in the area has rapidly deteriorated, largely as a result of the dramatic increase in wells and fracking in the area. EPA has also promulgated stricter standards for ozone, and monitors in the Greater Carlsbad area have been regularly exceeding this standard in recent years.

253. Unless this court overturns the challenged Lease Authorizations, BLM will not be able to consider any alternative that forbids oil and gas development on these parcels even if the agency were to determine, based on subsequent NEPA analysis at the APD stage, such closure is necessary to protect important environmental values, such as regional air quality and water resources or the global climate. Once a lease is sold, “[a] lessee shall have the right to use so much of the leased lands as is necessary to explore for, drill for, mine, extract, remove and dispose of all the leased resource in a leasehold,” subject to stipulations or reasonable measures “consistent with lease rights.” 43 C.F.R. § 3101.1-2. Mitigation measures or conditions of approval cannot take away lease rights or prevent oil and gas extraction.

254. As noted above, the BLM leased 164 parcels covering more than 51,000 acres in the Carlsbad Field Office between September 2017 and September 2018. *See* Table A. The challenged lease sales have collectively removed a significant area of land from consideration for potential closure to oil and gas development, limiting the alternatives available to BLM in the ongoing RMP planning process.

255. By failing to perform the necessary analysis at the leasing stage, BLM presupposes that any site-specific impacts from oil and gas development can be mitigated at the APD stage to prevent significant impacts before even knowing the type and extent of those site-specific impacts.

256. BLM also arbitrarily presupposes that the benefits associated with oil and gas

development outweigh the risks to natural resources such as wildlife habitat, and air and water quality. In making this unsupported and predetermined conclusion, BLM has made an irreversible and irretrievable commitment of resources that benefits oil and gas leasing and drilling at the expense of other multiple use resources.

B. BLM's Inadequate Analysis of Climate Change Impacts

257. BLM failed to take a hard look at the direct, indirect, and cumulative impacts of climate change.

258. For direct impacts of the Leasing Authorizations, BLM merely calculated direct wellhead emissions based on an estimate of total wells to be developed on the leased parcels. BLM then compared these annual emissions estimates to total direct oil and gas wellhead emissions at a national, state-wide, and regional level. Besides cursory statements that the impacts would be “very small” in comparison to total emissions levels, BLM failed to assess the significance of these emissions, despite the availability of scientifically-validated tools to do so. For example, BLM failed to utilize the available social cost of carbon tool to inform its analysis, nor did BLM consider any information regarding carbon budgeting needed to avert the worst impacts of climate change.

259. For indirect impacts, BLM provided calculations of indirect emissions of downstream combustion of oil and gas extracted from the leased parcels. But BLM provided absolutely no context for these projected emissions, leaving decision-makers without the information needed to assess whether such emissions were significant. As described above, when social cost of carbon and carbon budgeting tools are applied, the significance of these downstream emissions is undeniable. BLM, however, refused to use these available tools – or any other methodology – to actually assess the significance of downstream emissions in the

context of the current climate crisis. BLM further provided absolutely no quantification or assessment of the emissions associated with transporting and refining oil and gas produced from the leased parcels, despite acknowledging that about 10% of emissions from oil production come from these indirect activities.

260. BLM provided no quantification or assessment of the cumulative impacts of the challenged actions in conjunction with other past, present, and future oil and gas development. Specifically, BLM failed to consider the cumulative impacts of the Leasing Authorizations in light of the rapid expansion of oil and gas production in the Greater Carlsbad region/Permian Basin and the critical need to limit future production from the region in order to avert global climate catastrophe.

261. Nor did BLM consider the agency's instrumental role in encouraging and facilitating oil and gas development on public lands, including the 14.5 million acres of lands leased by BLM for oil and gas development between 2008 and 2017.

262. Instead of preparing the required cumulative effects assessment for each of the lease sales, BLM relied wholly on cursory, high-level analysis of the general issue of global climate change as contained in the agency's Air Resources Technical Report (USDI BLM, 2017), and other reports documenting the science of global climate change, such as IPCC reports and the National Climate Assessment. These reports do not, however, substitute for a cumulative effects assessment that actually considers and places into context the specific agency actions being evaluated, the 192 Leasing Authorizations at issue here.

263. As BLM itself noted in the introduction to the Technical Report:

The purpose of this document is to summarize the technical information on air quality and climate change relative to all Environmental Assessment (EAs) for Application for Permit to Drill (APD) and Lease sales. The intent of this document

is to collect and present the data and information needed for air quality and climate change analysis pertaining to oil and gas development.

264. Thus, the Technical Report “summarize[s] technical information on air quality and climate change” and includes data and information “needed for air quality and climate change analysis pertaining to oil and gas development,” such as per-well emissions estimates and emissions factors for downstream combustion. But the Technical Report does not actually provide such required analysis for specific agency actions, which the report authors assumed would later be provided by BLM during the environmental review for individual lease sales.

265. Instead, the Technical Report simply provides a quick look at the overall state of U.S. emissions, which distressingly continue to increase despite the global imperative of a rapid reduction in carbon emissions.

266. The Technical Report does not provide the specific context needed to assess the significance of cumulative impacts associated with increased greenhouse gas emissions from new oil and gas development and production in the Greater Carlsbad region/Permian Basin. Nor can general IPCC reports or the National Climate Assessment substitute for the necessary cumulative impacts assessment for the Leasing Authorizations, which must take a hard look at the emissions from the individual lease sales in conjunction with other oil and gas development in the Pecos District, in the Greater Carlsbad region/Permian Basin, and on BLM lands throughout the Rocky Mountain West.

267. For the September and December 2017 lease sales, BLM simply totaled up the potential direct well-head and (incomplete) indirect downstream combustion emissions from each of *the individual lease sales in isolation* and incorrectly considered these figures to constitute a cumulative effects assessment. In other words, BLM separately looked at the direct and indirect emissions associated with each individual lease sale, but completely failed to

consider the cumulative climate impacts of these emissions in conjunction with *any other* federal or non-federal activities, including BLM's other recent (and planned) oil and gas lease sales in the Pecos District and throughout the Rocky Mountain West, and the booming oil and gas production on private and state lands in the Greater Carlsbad region/Permian Basin.

268. The EA for the September 2018 lease sale contains no assessment of the cumulative impacts of the lease sales in conjunction with any other oil and gas development activities aside from the individual lease sale at issue in each EA, but instead simply note that “[t]he cumulative impacts of GHG emissions and their relationship to climate change are evaluated at the national and global levels in the Air Resources Technical Report (USDI BLM, 2017).” Critically, however, the Air Resources Technical Report does not consider the emissions impacts of the Leasing Authorizations, other BLM leasing activities, or the ongoing fracking boom in the Greater Carlsbad region/Permian Basin. This general report does not make up for BLM's complete lack of an actual cumulative impacts assessment of the Leasing Authorizations.

269. Notably, BLM held the three challenged lease sales in the Pecos District within a span of 13 months between September 2017 and September 2018. Yet none of the Leasing Authorizations for these lease sales included any acknowledgment, much less assessment, of the impacts of the other lease sales. Thus, for example, the EA for the September 2018 lease sale completely fails to consider the two recent prior sales in the Pecos District.

270. Nor did BLM consider, in any of the EAs, the cumulative impacts of future pending BLM lease sales in the Pecos District or elsewhere. In December 2018 and March 2019, BLM auctioned off nearly 42,000 acres of additional public land in the Pecos District. Additional BLM lease sales are already planned for June 2019, September 2019, and November 2019, with BLM proposing the further sale of more than 4,400 new acres in the Pecos District.

271. NEPA requires BLM to consider the cumulative impacts of the Leasing Authorizations in conjunction with ongoing and planned oil and gas development throughout the Greater Carlsbad region, past, present, and future oil and gas development on BLM lands throughout the Western United States. At a bare minimum, however, BLM should have assessed the cumulative impacts of the individual Leasing Authorizations added to the climate impacts of BLM's ongoing efforts to expand oil and gas production in the Pecos District, as such information was readily available in BLM's own files.

C. BLM's Inadequate Analysis of Fracking Impacts

272. As with climate change, BLM failed to take a hard look or fully assess the significance of the direct and indirect impacts of unconventional oil and gas production via multi-stage hydraulic fracturing and horizontal drilling on air quality, water resources, and other environmental factors. Nor did BLM consider the cumulative impacts of the individual lease sales in conjunction with any other past, present, or future actions, including the other Leasing Authorizations.

1. Air Quality

273. BLM acknowledges in at least one of its EAs that "[e]xploration and production would contribute to incremental increases in overall air quality emissions associated with oil and gas exploration and production into the atmosphere." Further, the agency recognizes "[t]he most significant criteria pollutants emitted by oil and gas development and production are VOCs, particulate matter and NO₂," with VOCs and NO₂ both "contribut[ing] to the formation of ozone, which is the pollutant of most concern to the PDO." However, without scientific assessment or support, BLM cursorily concluded: "The additional NO₂ and VOCs emitted from any oil and gas development on these leases are likely too small to have a significant effect on the overall ozone

levels of the area.” Yet BLM never quantifies these emissions or provides air quality modeling to support this conclusion.

274. In its EA for the September 2018 lease sale, BLM states, without support:

The potential amounts of ozone precursor emissions of NO_x and VOCs from the proposed lease sale are not expected to impact the current design value for ozone in Chaves, Eddy and Lea counties under the Proposed Action Alternative however more information at the development stage will provide more information to better estimate air emissions from a specific project.

Critically, however, BLM provides *no quantification whatsoever* of potential NO_x and VOC emissions from the proposed lease sales, so the agency has no factual basis for concluding that such unknown amounts should not affect regional air quality. BLM repeats this error for each of the Leasing Authorizations.

275. BLM’s dismissal of air quality concerns is particularly problematic given the elevated ozone levels already found in the Greater Carlsbad region. As noted above, EPA data from 2018 shows numerous ozone exceedances for all of the area’s air quality monitoring sites. Based on the three-year 2016–2018 average of the fourth-highest daily maximum, Eddy County and Carlsbad Caverns National Park are now exceeding the ozone NAAQS, and Lea County will likely soon follow.

276. Ozone levels in the Greater Carlsbad region have been worsening for more than a decade, despite substantial improvements in ozone levels in most other areas. BLM’s Technical Report states that “national ozone concentrations in rural areas have decreased approximately 11% from 2000 to 2015” yet “[i]n Carlsbad, NM, removing the effects of weather, ozone concentrations increased 8% between 2000 and 2012.” Ozone levels have continued to worsen since 2012 as the fracking boom has spread throughout the Greater Carlsbad region.

277. In the absence of any modeling or other scientific analysis of the impacts of

increasing ozone emissions in this already-stressed area, BLM acted arbitrarily and capriciously by concluding that the individual Leasing Authorizations would not have significant direct and indirect effects on regional air quality, particularly with respect to ozone.

278. BLM also failed to consider any cumulative impacts on ozone levels from the Lease Authorizations, failing to quantify emissions of ozone precursors from the individual lease sales or from other past, present, and future oil and gas development in the region. With many adjacent and nearby parcels among the three lease sales in 2017 and 2018, BLM has no excuse for failing to acknowledge and quantify the cumulative emissions from these lease sales, which occurred in a narrow 13-month period in BLM's Pecos District.

279. BLM also fails to assess the significance of allowing future oil and gas development in the Pecos District, thereby increasing emissions of critical ozone precursors. In light of the fact that regional air quality is already at, or exceeding EPA's health-based NAAQS for ozone, any increase in emissions of ozone precursors, like VOCs and NO_x, is highly significant.

2. Water Resources

280. Oil and gas development, particularly unconventional techniques using multi-stage hydraulic fracturing and horizontal drilling, poses well-documented risks to water quality. These risks are heightened by the geologic formations and aquifers underlying the Greater Carlsbad region. In particular, the karst geology presents extreme water quality risks that BLM never fully considered.

281. Karst formations in the Greater Carlsbad region are generally formed by the dissolution of limestone or gypsum, producing highly porous rock characterized by cavernous porosity and conduit flow. Drilling through karst formations can lead to blown wells and bit

drops, which risk the contamination of aquifers with fracking fluid or oil and gas constituents. Groundwater contamination in karst aquifers can spread rapidly through preferential flow paths, which include large caves and caverns in the Greater Carlsbad region.

282. A BLM scientist in the Carlsbad Field Office used a dye tracer study to document “positive connections between the oil and gas drilling operations and several critical water supplies” in the area. This BLM study refutes BLM’s assertion that proper construction practices, drilling practices, and BMPs can reduce potential adverse impacts to area aquifers below a level of potential significance. To the contrary, BLM’s own scientists have concluded that: “The initial results are conclusive that the drilling fluids *do* enter the aquifers.” (emphasis added).

283. In recognition of the significant risks posed by oil and gas development to the Capitan Aquifer, which serves as the City of Carlsbad’s public water supply, BLM deferred certain parcels from the September 2018 lease sale in light of the documented caves and karst features in the area. Yet in other areas with documented karst features, BLM has proceeded with oil and gas leasing activities.

284. As part of the September 2018 lease sale, BLM issued leases on 47 parcels totaling 21,083.96 acres identified as having either medium or high cave potential. As the sole mitigation for impacts to karst topographic features and aquifers, BLM relies on a lease stipulation that simply prohibits drilling within “200 meters of *known* cave entrances, passages or aspects of significant caves, or significant karst features.” SENM-S-21 (emphasis added). This stipulation, however, does not require any additional surveying or assessment of karst features that may not yet be documented. And even where such a stipulation is in effect, it is inadequate to prevent the risk of contaminating karst aquifers, given that it relies on an unreasonably

optimistic assumption that well sealing and casing will be 100% effective in preventing contamination of non-targeted karst aquifers.

285. Given the recognized aquifer contamination risk associated with oil and gas drilling and production in karst areas and BLM's incomplete knowledge regarding the extent of karst in the Pecos District – both above- and below-ground – BLM cannot rely on the karst mitigation stipulation for its conclusion that no significant impacts on karst resources are likely. BLM failed to offer a convincing explanation for how this stipulation – which at best protects only *known* karst resources – is adequate to protect against significant impacts to areas of unmapped karst resources, which are likely to be extensive.

286. Nor has the agency taken a hard look at likely impacts to water resources due to the extraction of massive amounts of water needed to support fracking. BLM failed to compare information regarding water usage and potential sources with existing water resources, surface and groundwater, to develop at least a qualitative assessment of where the fracking water is likely to come from, and the likely impacts of such use.

287. The agency proposes to defer site-specific analysis of water resources impacts to the APD stage, calling it “speculative to predict the actual source of water that will be used” during fracking operations. But given the substantial oil and gas development that has already occurred in areas near the leased parcels, the agency could have provided reasonable estimates for the amount of water needed per fracked well, likely number of wells to be fracked (and re-fracked), and total amount of water resources needed to support the development of the leased parcels. This information is necessary to assess the significance of the water resources impacts of BLM's leasing activities, yet BLM failed to provide this necessary information for the September 2017, December 2017, and September 2018 lease sales. Thus, the true significance of

projected water usage cannot be determined based upon the information relied upon and provided by BLM.

288. BLM's claim that it would be speculative to predict potential water sources is belied by its apparent ability to do so in subsequent lease sales. For the December 2018 lease, BLM did, in fact, estimate potential water usage and identify regional water sources, demonstrating that such an assessment was feasible for the earlier sales.

289. Critically, however, BLM never analyzed in any of the challenged EAs whether additional water resources are in fact physically and legally available to meet projected demands. Specifically, BLM failed to provide any information regarding the current conditions of any of the rivers or aquifers that will potentially be tapped to serve new oil and gas development. BLM's failure to provide this information leaves decision-makers in the dark as to whether area rivers have adequate flows to support additional withdrawals and whether aquifers in the region are already in an unsustainable, overdraft condition, which would be exacerbated by additional water usage for oil and gas development.

3. Other Impacts

290. BLM failed to assess the environmental impacts associated with the additional infrastructure that will inevitably be needed to support oil and gas development on the leased parcels. Specifically, BLM provided no assessment of additional roads, gathering pipelines, or wastewater disposal wells needed to serve the leased parcels. Nor did BLM assess the impacts of the significant truck traffic that will be generated by development of the leased parcels throughout the region, or explain why such truck traffic – and associated air emissions, dust, and noise – would not have a significant environmental impact.

291. BLM also failed to assess the risks of potential induced seismicity associated with

fracking and underground wastewater injection, despite the well-documented connection between oil and gas development activities and earthquakes. With recent increases in seismic activity in the Greater Carlsbad region/Permian Basin corresponding to the increase in oil and gas production in the area, BLM was on notice of induced seismicity as a distinct risk associated with increasing oil and gas development in the Pecos District. As noted above, since 1999, more than two dozen earthquakes have been recorded in the oil and gas producing area northwest of Carlsbad within the Carlsbad Field Office, including in areas leased as part of the challenged lease sales. BLM failed to consider this potentially significant environmental impact. While the Hydraulic Fracturing White Paper incorporated into at least one of the challenged EAs flagged induced seismicity as a potential issue related to fracking and wastewater disposal, the agency provided no analysis of the magnitude or significance of the risk. Notably, the agency provided no discussion of the earthquake activity that has been documented in the Greater Carlsbad region/Permian Basin and its likely connection to oil and gas development.

CLAIMS FOR RELIEF

FIRST CLAIM FOR RELIEF

Failure to Take a Hard Look at the Environmental Impacts of Oil and Gas Development (BLM's Violation of NEPA)

292. The allegations made in all preceding paragraphs are re-alleged and incorporated by this reference.

293. Pursuant to NEPA and its implementing regulations, BLM must take a hard look at the direct, indirect, and cumulative environmental impacts of a proposed action before the agency makes any irreversible and irretrievable commitment of resources. 42 U.S.C. §§ 4332(2)I(i)-(v); 40 C.F.R. §§ 1502.14(a), 1502.16, 1508.7, 1508.8, and 1508.14.

294. BLM tiered its EAs for the September 2017, December 2017, and September

2018, lease sales to outdated BLM planning documents, namely the 1988 Carlsbad RMP/EIS and its 1997 amendments, and the 1997 Roswell RMP/EIS. These outdated planning documents did not account for the development of new drilling technologies, including multi-stage fracking and horizontal drilling, that have been widely adopted in the Greater Carlsbad region/Permian Basin over the past ten years. Not only do these unconventional drilling techniques result in different types and magnitude of environmental impacts compared to traditional oil and gas development, these technologies have enabled a boom in production throughout the Greater Carlsbad region/Permian Basin that was unanticipated when BLM's planning documents were completed. By tiering its analysis to these outdated planning documents, BLM failed to take a hard look at the environmental impacts of the Leasing Authorizations.

295. Oil and gas development on the 192 leases, individually and when added to other past, present, and reasonably foreseeable future activities have potentially significant direct, indirect, and cumulative impacts on air quality, water quality and quantity, climate, landscapes, and seismic stability in the region. In spite of this, BLM did not take a hard look at any of these impacts associated with expanding oil and gas development in the Pecos District.

296. Because lease issuance without a No Surface Occupancy stipulation represents an irretrievable commitment of resources, BLM must take a hard look at all reasonably foreseeable impacts at the leasing stage.

297. Because BLM failed to take a hard look at direct, indirect, and cumulative impacts of expanding oil and gas development in BLM's Pecos District, BLM's authorization of the 192 leases challenged herein is arbitrary, capricious, and abuse of discretion, in excess of statutory authority and limitations, short of statutory right, and not in accordance with the law and procedures required by law. 5 U.S.C. §§ 706(2)(A), (C), (D).

SECOND CLAIM FOR RELIEF
Failure to Provide a Convincing Statement of Reasons on the Record Justifying Decision to
Forego Preparation of an EIS
(BLM's Violation of NEPA)

298. The allegations made in all preceding paragraphs are re-alleged and incorporated by this reference.

299. BLM's authorization and issuance of the leases sold through the September 2017, December 2017, and September 2018 oil and gas lease sales constitute major federal actions under NEPA.

300. BLM does not have to prepare an EIS where it has demonstrated that the proposed action "will not have a significant effect on the human environment[.]" 40 C.F.R. § 1508.13. To assess whether or not an impact is significant, BLM must consider the "context and intensity" of the impact. 40 C.F.R. § 1508.27.

301. BLM failed to evaluate the context and intensity of the environmental impacts resulting from its decision to issue the 192 leases challenged herein, pursuant to NEPA. BLM also failed to provide convincing statements of reasons justifying its decision to forgo an EIS analyzing the impacts of the 192 lease parcels challenged herein, as required by NEPA.

302. BLM's Leasing Authorizations could significantly impact climate, air quality, water quality and quantity, landscapes, and seismic stability in the region. NEPA therefore requires BLM to identify such impacts and assess their context and intensity on the record to support the agency's decision to forego an EIS.

303. BLM's assertion in its EAs that it may require mitigation measures at the drilling stage does not eliminate substantial questions at the leasing stage as to whether lease

development may significantly impact the environment and, further, does not support BLM's decisions to forgo EISs for the three lease sales.

304. Because BLM failed to provide a convincing statement of reasons on the record justifying its decisions to forego preparation of an EIS, BLM's actions are arbitrary, capricious, and abuse of discretion, in excess of statutory authority and limitations, short of statutory right, and not in accordance with the law and procedures required by law. 5 U.S.C. §§ 706(2)(A), (C), (D).

THIRD CLAIM FOR RELIEF
Unlawful Issuance of Leases During Pending Resource Management Plan Amendment
(BLM's Violation of NEPA)

305. The allegations made in all preceding paragraphs are re-alleged and incorporated by this reference.

306. BLM has determined, consistent with the agency's obligation pursuant to 43 C.F.R. § 1610.5-6, that a Carlsbad Field Office RMP Amendment is needed to account for "changing land use conditions" and "changes in resource demands" in the area, "taking into account new technology, such as horizontal drilling methods." AMS, at 1-1.

307. Of the 192 leases issued as a result of the September 2017, December 2017, and September 2018 lease sales, 164 are located within the Carlsbad Field Office RMP Amendment planning area, as well as the Reasonably Foreseeable Development Scenario analysis area.

308. BLM sold the 164 leases within the Carlsbad Field Office challenged herein according to the conditions and analyses contained in the 1988 Carlsbad RMP, and the 1997 Carlsbad RMP update.

309. BLM's Carlsbad Field Office is currently undergoing a revision of the 1988 RMP, as updated in 1997.

310. Pursuant to NEPA implementing regulations at 40 C.F.R. § 1506.1(c): “[w]hile work on a required program environmental impact statement is in progress and the action is not covered by an existing program statement, agencies shall not undertake in the interim any major Federal action covered by the program which may significantly affect the quality of the human environment...”

311. The sale of the 164 challenged leases within the Carlsbad Field Office impermissibly prejudices the decisionmaking process and limits the choices of alternatives in the pending Carlsbad RMP Amendment and EIS, in violation of 40 C.F.R. § 1506.1(c).

312. Because BLM authorized an action that could prejudice or limit the choice of alternatives in the broader EIS that will accompany the ongoing Resource Management Plan Amendment, BLM’s actions are arbitrary, capricious, and abuse of discretion, in excess of statutory authority and limitations, short of statutory right, and not in accordance with the law and procedures required by law. 5 U.S.C. §§ 706(2)(A), (C), (D).

FOURTH CLAIM FOR RELIEF
Unlawful Adoption and Implementation of IM 2018-034
(BLM’s Violation of NEPA, FLPMA, and BLM Regulations)

313. The allegations made in all preceding paragraphs are realleged and incorporated by this reference.

314. This Fourth Claim for Relief challenges BLM’s adoption and implementation of IM 2018-034 as violating the public participation requirements of FLPMA, 43 U.S.C. § 1739(e), NEPA, 42 U.S.C. §§ 4321 *et seq.*, and the implementing regulations of NEPA, 40 C.F.R. §§ 1500 *et seq.* This claim is brought under the judicial review provisions of the APA, 5 U.S.C. § 706.

315. FLPMA Section 309(e) provides that the public must be allowed meaningful participation in public lands management decisions. 43 U.S.C. § 1739(e). It requires that: “In exercising his authorities under this Act, the Secretary [of Interior] shall establish procedures, including public hearings where appropriate, to give the Federal, State, and local governments and the public adequate notice and an opportunity to comment upon the formulation of standards and criteria for, and to participate in, the preparation and execution of plans and programs for, and the management of, the public lands.” *Id.* (emphasis added).

316. The Department of the Interior’s regulations implementing FLPMA further require that “[t]he public shall be provided opportunities to meaningfully participate in and comment on the preparation of plans, amendments and related guidance and be given early notice of planning activities.” 43 C.F.R. § 1610.2(a).

317. The FLPMA mandate to involve the public in all public lands management decisions applies not just to the development of plans and programs, but also to the “actual management of public lands.” *Donald K. Majors*, 123 IBLA 142, 147 (1992). “There are strong indications that Congress intended some form of public input for all decisions that may have significant impact on federal lands.” *Nat’l Wildlife Fed’n v. Burford*, 835 F.2d 305, 322 (1987) (citing H.R. Rep. No. 1163, 94th Cong., 2d Sess. 7 (1976), U.S. Code Cong. & Ad. News 1976, p. 6181), *rev’d on other grounds*, 497 U.S. 871 (1990).

318. NEPA regulations mandate that agencies “shall to the fullest extent possible . . . [e]ncourage and facilitate public involvement in the decisions which affect the quality of the human environment.” 40 C.F.R. § 1500.2(d). Indeed, “NEPA procedures must insure that environmental information is available to public officials and citizens *before decisions are made*

and before actions are taken Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA.” *Id.* § 1500.1(b) (emphasis added).

319. NEPA and implementing CEQ regulations further require federal agencies to involve the public in preparing and considering environmental documents that implement the Act. 40 C.F.R. § 1506.6; *id.* § 1506.6(b)(1) (requiring federal agencies to “[p]rovide public notice of NEPA-related hearings, public meetings, and the availability of environmental documents so as to inform those persons and agencies who may be interested or affected”); *id.* § 1506.6(a) (requiring agencies to “make diligent efforts to involve the public in preparing and implementing their NEPA procedures”); *id.* § 1501.4(b) (requiring agencies to “involve . . . the public, to the extent practicable, in preparing [EAs]”); *id.* § 1502.19(a) (requiring public circulation of draft and final EISs).

320. As discussed above, IM 2018-034 makes public participation in the NEPA process for oil and gas lease sale review merely discretionary. IM 2018-034 replaced language from IM 2010-117 stating that BLM offices “will” provide for public participation with a provision that they “may” do so, thus violating the public participation requirement under CEQ regulations.

321. Moreover, IM 2018-034 purports to allow BLM to limit or exclude public involvement in oil and gas leasing decisions in other ways, including but not limited to avoiding new NEPA analysis and providing that public protests of a lease sale must be submitted within only 10 days, in contrast to the prior 30-day time period.

322. Department of Interior regulations further provide that the inclusion of particular parcels in a Notice of Competitive Lease Sale may be subject to protest or appeal. 43 C.F.R. § 3120.1-3.

323. In light of the unreasonable constraints on public participation created by multiple provisions of IM 2018-034, including requiring Guardians and other members of the public to formulate and submit protests on oil and gas lease sales within only 10 days, IM 2018-034 deprives Guardians and the public of the meaningful opportunity to participate in leasing decisions, including the Leasing Authorizations for the September 2018 lease sale, in violation of FLPMA and NEPA.

324. BLM regulations allow for lease sales to be suspended pending resolution of administrative protests and appeals, stating that “[t]he authorized officer may suspend the offering of a specific parcel while considering a protest or appeal against its inclusion in a Notice of Competitive Lease Sale.” 43 C.F.R. § 3120.1-3. Further, “the Assistant Secretary for Land and Minerals Management may suspend a lease sale for good and just cause after reviewing the reason(s) for an appeal.” *Id.*

325. IM 2018-034, however, eliminates BLM officers’ discretion to suspend the sale of protested parcels pending resolution of the protest, specifically providing that “Parcels subject to protests that are not resolved (i.e., pending protests) *will be offered for lease sale.*” (emphasis added).

326. By eliminating any officer discretion to suspend the sale of protested parcels pending resolution of the protests, BLM’s adoption of IM 2018-04 was in violation of 43 C.F.R. § 3120.1-3.

327. In its decision-making process for the September 2018 lease sale, BLM followed the unlawful public participation procedures outlined by IM 2018-04. BLM provided no opportunity for public comment on a draft EA for either of these lease sales, limited the protest

period to only ten days, and proceeded with the lease sales while protests, including Guardians' protests, were pending.

328. BLM's adoption and implementation of IM 2018-034 is arbitrary, capricious, an abuse of discretion, and not in accordance with law under FLPMA, NEPA, and the APA, which has caused or threatens serious prejudice and injury to the rights and interests of Guardians and their officers, members and staff.

FIFTH CLAIM FOR RELIEF
Unlawful Violation of Notice and Comment Rulemaking Requirements
(BLM's Violation of the APA)

329. The allegations made in all preceding paragraphs are realleged and incorporated by this reference.

330. This Fifth Claim for Relief challenges BLM's adoption of IM 2018-034 as violating requirements for public notice and comment in agency rulemaking under 5 U.S.C. § 553. This claim is brought under the judicial review provisions of the APA, 5 U.S.C. § 706.

331. The APA requires federal agencies to provide public notice of, and an opportunity for public comment on, all legislative rules. *See* 5 U.S.C. § 553.

332. IM 2018-034 constitutes a legislative rule because it effectively rescinds CEQ regulations requiring agencies to "involve the public" in the NEPA review process. *See* 40 C.F.R. §§ 1506.6, 1500.1(b), & 1501.4(b).

333. IM 2018-034 also constitutes a legislative rule because it contains rules which bind the agency and impose or affect individual rights and duties, including the rights of Guardians and the public to exercise their rights to protest or appeal oil and gas leasing decisions under the Mineral Leasing Act.

334. IM 2018-034 also constitutes a legislative rule because it so severely forecloses effective opportunities for public participation in the BLM's oil and gas lease sale process – including in the Leasing Authorizations challenged herein – that it jeopardizes the substantive rights and interests of Guardians and other members of the public under NEPA, FLPMA, and other applicable laws.

335. By failing to provide public notice or an opportunity for public comment before issuing IM 2018-034, Defendants failed to observe procedures required by law, in contravention of the APA. 5 U.S.C. § 553. Accordingly, IM 2018-034 is arbitrary, capricious, and contrary to law, in violation of the APA, which has caused and threatens further serious prejudice and injury to the rights and interests of Guardians and its members and staff.

RELIEF REQUESTED

WHEREFORE, Guardians respectfully requests that this Court:

- A.** Declare that Defendants' Leasing Authorizations violate NEPA, FLPMA, the APA, and their implementing regulations, and;
- B.** Vacate and remand Defendants' Leasing Authorizations;
- C.** Enjoin Defendants from any further leasing authorizations within the Pecos District pending Defendants' full compliance with NEPA, FLPMA, the APA, and their implementing regulations;
- D.** Enjoin Federal Defendants from approving or otherwise taking action on any pending or future applications for permits to drill on the leases included in the lease sales challenged herein until Federal Defendants have fully complied with NEPA and its implementing regulations;

E. Declare that IM 2018-04 is unlawful under FLPMA, NEPA, the APA, and their regulations, and reverse, set aside, and enjoin Defendants from continuing to implement IM 2018-034;

F. Enter such other declaratory and/or injunctive relief as Guardians may specifically request hereafter;

G. Retain continuing jurisdiction of this matter until Defendants fully remedy the violations of law complained of herein;

H. Award Guardians its fees, costs, and other expenses as provided by applicable law; and

I. Grant Guardians such additional and further relief as this Court may deem just, proper, and equitable.

Respectfully submitted this 18th day of October 2019,

/s/ Daniel L. Timmons
Daniel L. Timmons
505.570.7014
dtimmons@wildearthguardians.org

/s/ Samantha Ruscavage-Barz
Samantha Ruscavage-Barz
505.401.4180
sruscavagebarz@wildearthguardians.org

WILDEARTH GUARDIANS
301 N. Guadalupe Street, Suite 201
Santa Fe, New Mexico 87501

Counsel for Plaintiff WildEarth Guardians

Table A. List of Lease Parcels Challenged Herein**September 7, 2017 Lease Sale**

Lease Serial Number	BLM Field Office
NMNM 137429	Carlsbad
NMNM 137430	Carlsbad
NMNM 137432	Carlsbad
NMNM 137436	Roswell
NMNM 137437	Roswell
NMNM 137439	Roswell
NMNM 137445	Carlsbad
NMNM 137446	Roswell
NMNM 137447	Carlsbad
NMNM 137448	Carlsbad
NMNM 137449	Roswell
NMNM 137450	Roswell
NMNM 137451	Roswell
NMNM 137452	Roswell
NMNM 137453	Carlsbad
NMNM 137454	Carlsbad
NMNM 137455	Carlsbad
NMNM 137456	Carlsbad
NMNM 137457	Carlsbad
NMNM 137458	Carlsbad
NMNM 137460	Roswell
NMNM 137461	Roswell

Lease Serial Number	BLM Field Office
NMNM 137462	Carlsbad
NMNM 137463	Carlsbad
NMNM 137464	Carlsbad
NMNM 137465	Carlsbad
NMNM 137466	Carlsbad
NMNM 137467	Carlsbad
NMNM 137468	Carlsbad
NMNM 137469	Carlsbad
NMNM 137470	Carlsbad
NMNM 137471	Carlsbad
NMNM 137472	Carlsbad
NMNM 137473	Carlsbad
NMNM 137474	Carlsbad
NMNM 137475	Carlsbad
NMNM 137476	Carlsbad
NMNM 137477	Carlsbad
NMNM 137478	Carlsbad
NMNM 137479	Carlsbad
NMNM 137480	Carlsbad
NMNM 137482	Carlsbad
NMNM 137483	Carlsbad

December 7, 2017 Lease Sale

Lease Serial Number	BLM Field Office
NMNM 137803	Carlsbad
NMNM 137804	Carlsbad
NMNM 137805	Carlsbad
NMNM 137806	Carlsbad

Lease Serial Number	BLM Field Office
NMNM 137807	Carlsbad
NMNM 137808	Carlsbad
NMNM 137809	Carlsbad

September 5-6, 2018 Lease Sale

Lease Serial Number	BLM Field Office
NMNM 138795	Roswell
NMNM 138796	Carlsbad
NMNM 138797	Carlsbad
NMNM 138798	Carlsbad
NMNM 138799	Carlsbad
NMNM 138800	Carlsbad
NMNM 138801	Carlsbad
NMNM 138802	Carlsbad
NMNM 138803	Carlsbad
NMNM 138804	Carlsbad
NMNM 138805	Carlsbad
NMNM 138806	Carlsbad
NMNM 138807	Carlsbad
NMNM 138808	Carlsbad
NMNM 138809	Carlsbad
NMNM 138810	Carlsbad
NMNM 138811	Carlsbad
NMNM 138812	Carlsbad
NMNM 138813	Carlsbad
NMNM 138814	Carlsbad
NMNM 138815	Carlsbad
NMNM 138816	Carlsbad
NMNM 138817	Carlsbad
NMNM 138818	Carlsbad
NMNM 138819	Carlsbad
NMNM 138820	Carlsbad
NMNM 138821	Carlsbad
NMNM 138822	Carlsbad
NMNM 138823	Carlsbad
NMNM 138824	Carlsbad
NMNM 138825	Carlsbad
NMNM 138826	Carlsbad
NMNM 138827	Carlsbad
NMNM 138828	Carlsbad

Lease Serial Number	BLM Field Office
NMNM 138866	Carlsbad
NMNM 138867	Carlsbad
NMNM 138868	Carlsbad
NMNM 138869	Carlsbad
NMNM 138870	Carlsbad
NMNM 138871	Carlsbad
NMNM 138872	Carlsbad
NMNM 138873	Carlsbad
NMNM 138874	Carlsbad
NMNM 138875	Carlsbad
NMNM 138876	Carlsbad
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NMNM 138889	Carlsbad
NMNM 138890	Carlsbad
NMNM 138891	Carlsbad
NMNM 138892	Carlsbad
NMNM 138893	Carlsbad
NMNM 138894	Carlsbad
NMNM 138895	Carlsbad
NMNM 138896	Carlsbad
NMNM 138897	Carlsbad
NMNM 138898	Carlsbad
NMNM 138899	Carlsbad

NMNM	138829	Roswell
NMNM	138830	Carlsbad
NMNM	138831	Roswell
NMNM	138832	Roswell
NMNM	138833	Roswell
NMNM	138834	Carlsbad
NMNM	138835	Carlsbad
NMNM	138836	Carlsbad
NMNM	138837	Carlsbad
NMNM	138838	Roswell
NMNM	138839	Roswell
NMNM	138840	Roswell
NMNM	138841	Roswell
NMNM	138842	Roswell
NMNM	138843	Carlsbad
NMNM	138844	Carlsbad
NMNM	138845	Carlsbad
NMNM	138846	Carlsbad
NMNM	138847	Carlsbad
NMNM	138848	Carlsbad
NMNM	138849	Carlsbad
NMNM	138850	Carlsbad
NMNM	138851	Carlsbad
NMNM	138852	Roswell
NMNM	138853	Roswell
NMNM	138854	Roswell
NMNM	138855	Roswell
NMNM	138856	Roswell
NMNM	138857	Roswell
NMNM	138858	Roswell
NMNM	138859	Roswell
NMNM	138860	Carlsbad
NMNM	138861	Carlsbad
NMNM	138862	Carlsbad
NMNM	138863	Carlsbad
NMNM	138864	Carlsbad
NMNM	138865	Carlsbad

NMNM	138900	Carlsbad
NMNM	138901	Carlsbad
NMNM	138902	Carlsbad
NMNM	138903	Carlsbad
NMNM	138904	Carlsbad
NMNM	138905	Carlsbad
NMNM	138906	Carlsbad
NMNM	138907	Carlsbad
NMNM	138908	Carlsbad
NMNM	138909	Carlsbad
NMNM	138910	Carlsbad
NMNM	138911	Carlsbad
NMNM	138912	Carlsbad
NMNM	138913	Carlsbad
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NMNM	138915	Carlsbad
NMNM	138916	Carlsbad
NMNM	138917	Carlsbad
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NMNM	138929	Carlsbad
NMNM	138930	Carlsbad
NMNM	138931	Carlsbad
NMNM	138932	Carlsbad
NMNM	138933	Carlsbad
NMNM	138934	Carlsbad
NMNM	138935	Carlsbad
NMNM	138936	Carlsbad

CERTIFICATE OF SERVICE

I hereby certify that on October 18, 2019, I electronically filed the foregoing AMENDED PETITION FOR REVIEW OF AGENCY ACTION with the Clerk of the Court via the CM/ECF system, which will send notification of such filing to all counsel of record.

/s/ Daniel L. Timmons
Attorney for Plaintiff